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# APHIS Risk Analysis for Importation of the Classical Swine Fever Virus in Swine and Swine Products from France and Spain

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November 2003

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## Executive Summary

In April 2003 APHIS, VS published a final rule recognizing much of the European Union (EU) as a region in which Classical Swine Fever (CSF) does not exist [1]. The decision-making process was based on three documents. A proposed rule and a risk analysis were published in 1999 [2, 3]. The third document, a subsequent risk analysis entitled *Risk Analysis for Importation of Classical Swine Fever Virus in Swine and Swine Products from the European Union – December 2000* [4], was released in 2002 for public comment and represented a revision of the 1999 risk analysis. Data used in both risk analyses were collected during the 1997-98 CSF epidemic, considered the most severe ever experienced in Europe.

An underlying assumption of the analyses was that, because CSF was endemic in feral swine in several parts of the EU, outbreaks in domestic swine would continue to occur within the EU. However, given that assumption, VS concluded that the veterinary infrastructure, surveillance and control measures existing in the EU were sufficient to detect and control those outbreaks before infected animals or products could arrive in the US.

Prior to publication of the final rule, however, CSF outbreaks occurred in France, Spain, Luxembourg, and in certain *kreis* in Germany. Therefore, these 3 member states and the affected *kreis* in Germany were excluded from the final rule.

For the purposes of CSF regionalization, this analysis seeks (1) to establish whether the risk of CSF viral incursions from export of breeding swine, swine semen, and fresh pork from France and Spain<sup>1</sup> is such that APHIS can include them in the EU region defined in 2003 in which CSF is not known to exist; and (2) to describe the smallest administrative unit within France and Spain that could be the basis for regionalization in the event of future disease outbreaks.

Accepting the underlying assumption and conclusions from the original assessment, it would be necessary for the CSF situation (e.g. number of premises affected, spread of disease, etc.) to exceed the severity of the 1997-98 European epidemic for the risk to be considered unacceptable.

Because this constitutes a re-assessment of characteristics in the region (i.e. the EU), APHIS, VS did not conduct a separate 11 factor analysis as defined in 9 CFR 92.2 [5]. Rather, it focused on the ability of the veterinary authorities in France and Spain to detect, control and eradicate disease.

Observations made and information provided by veterinary officials during and after a site visit to France and Spain in February 2003 [6-8, 39, 44, 46, 47], published literature

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<sup>1</sup> Luxembourg and certain German *kreis* will be evaluated at a later time.

[9], EU legislation [10-31, 48-66], EU veterinary inspection reports [32-36], and reports to the OIE [37, 38] constitute the supporting documentation for this evaluation.

### *France*

In April 2002, France reported a single CSF outbreak on a holding in an area not far from where a CSF-infected wild boar had been found the month earlier. This remains the only domestic swine CSF outbreak in France since 1993 [6, 37, 38].

The CSF virus involved in this outbreak was genotype Rostock 2.3 strain, identical to the virus responsible for the epizootics in wild boars in various regions in Germany, Luxembourg, Belgium and France. It is also the same strain of virus associated with recent outbreaks in domestic pigs in Germany and Luxembourg.

While the virus was identical to the virus found in wild boars in the region, no epidemiological link with wild boar infection could be made. However, a likely hypothesis suggests that the exposure resulted from contact with either a person or vehicle contaminated with the virus. The virus was probably introduced on April 12 onto the affected premises by fomites, perhaps on the clothing or personal vehicle of a visiting farmer from Germany [6].

Suspicion of CSF infection was raised shortly after death of piglets occurred on this farm. French officials acted quickly to detect and confirm the virus. This was possible because of good compliance with reporting requirements. After disease was suspected, France established control mechanisms that limited spread of the virus. In fact, disease was confined to a single holding in France with one possible secondary holding in Germany.

The outbreak occurred in an area with low swine population density and an area in which CSF awareness was elevated due to proximity to wild boar CSF control zones. The high-density swine production areas of France are located more than 400 miles to the southwest.

All of these factors – heightened awareness, ongoing wild boar CSF surveillance, and good compliance with CSF control measures – had mitigating effects on the control of this outbreak.

The circumstances of this outbreak (infected wild boars as likely CSF source; virus spread via contaminated person or vehicle; limited spread due to the outbreak occurring in a low-density swine population area) are consistent with conclusions reached in the APHIS 2000 risk analysis.

With no further outbreaks occurring and with successful restocking of the affected premises under strict supervision and surveillance, APHIS concludes that France effectively contained this outbreak.

## *Spain*

Spain experienced a total of 49 outbreaks beginning in June 2001 and ending in May 2002, concentrated primarily in the Autonomous Region of Catalonia in northeastern Spain. There have not been any CSF outbreaks in Spain since May 2002 [7, 8, 37, 38].

The strain of CSF virus involved in this epidemic had not been isolated previously in any EU Member State, although it was similar to a strain associated with CSF outbreaks in domestic swine in Eastern European countries [7, 8, 39].

Spain, a major swine fattening and pork processing center in the EU, normally imported piglets from other EU Member States, particularly the Netherlands. However, because of the 2001 outbreak of Foot-and-Mouth Disease (FMD), movement of live animals from the Netherlands was prohibited. To fill the gap, swine producers in Spain sought alternative sources of feeder piglets from areas unaffected by FMD including Eastern European countries.

Spanish authorities have concluded that the virus most likely arrived in Spain through the illegal import of infected pigs from a region outside the EU from which swine imports would not otherwise occur [7]. Illegal animal movements also played a role in the spread of the disease after it was introduced into Spain. To address these illegal actions, Spain responded aggressively with criminal prosecutions and legal sanctions hoping to deter such illegal practices in the future.

In addition, other factors contributed to the spread of the disease. Because the virus was introduced into a high-density swine production area, there was extensive spread among holdings in close proximity – a finding consistent with the observations reported in the 2000 risk analysis. Recognizing this problem, Spain is implementing zoning restrictions that require a minimum 1 km separation between large swine production facilities.

Also contributing to the spread of disease, the existence of other swine diseases on some of the affected holdings delayed detection of CSF infection for a period of greater than 60 days [39]. In part based on this experience in Spain and in other Member Countries, the European Commission adopted a Diagnostic Manual for CSF which advises that CSF must be considered in case of many suspected swine diseases [10].

Once detected, Spanish officials responded aggressively with measures to contain and control the epidemic. Their efforts were enhanced by preventative slaughter of pigs within a 1 km. radius of infected premises, an intensive active surveillance program, effective movement controls (including detection and prosecution of illegal movements), and education efforts aimed to increase vigilance and awareness. Diagnostic instruction provided to local veterinarians and creation of the Health Rapid Reaction Network will enable regional authorities to quickly detect and respond to future animal disease crises.

Implementation of emergency response measures by regional authorities was greatly enhanced by the availability of data (e.g. geographic coordinates for swine holdings,

animal identification records, animal census figures, and movement records). The availability of such data proved so valuable that MAPA (*Ministerio de Agricultura, Pesca y Alimentacion*) is compiling similar information from all autonomous regions to create a national database to assist in emergency planning and response, disease modeling, and epidemiological investigations. This national database will improve Spain's ability to respond quickly and decisively to future animal disease outbreaks.

Since May 2002, there have been no further CSF outbreaks reported in Spain and affected holdings were successfully restocked. The circumstances of this epidemic are consistent with the conclusions reached in the APHIS 2000 risk analysis, particularly in regards to the risks of secondary spread associated with delayed detection and a high swine population density. APHIS concludes that Spain has eradicated CSF from its domestic herd.

#### *Administrative Units in France and Spain*

During the site visit to France, the APHIS team visited the headquarters of *Direction Generale de L'Alimentation* (DGAL), *Ministere de l'Agriculture, de l'Alimentation, de la Peche et des Affaires Rurales* (MAP) in Paris and the *Direction Departementale des Services Veterinaires* (DDSV) in Metz, Department of Moselle (Department 57) to observe the functions of the central and regional authorities. The team also visited the pig holding which experienced the CSF outbreak in April 2003, located in Chemery-les-Deux, the local *commune*.

In Spain, team members visited *Ministerio de Agricultura, Pesca y Alimentacion* (MAPA), *Subdireccion General de Sanidad Animal* (SGSV) headquarters in Madrid, the Cataluna regional authority (RCA) office in Barcelona, and the local *comarca* office in Osona to observe functions of the various levels. Spanish officials indicated that the veterinary infrastructure in Cataluna was representative of the infrastructure of the other 16 autonomous regions.

Veterinary surveillance and control activities at these levels appeared to be effective. APHIS concludes that for the purposes of regionalization the appropriate administrative unit is the *commune* for France and the *comarca* for Spain.

#### *Summary conclusions*

CSF-infected wild boars remain a potential source of disease and a risk factor in many EU Member States. CSF introduction into a high-density swine population and delayed detection can contribute significantly to disease spread once it is introduced. In this regard, the 2000 risk analysis showed that even during the worst epidemic (1997-1998) in known history and with consideration of these factors, the risk of a CSF incursion into the US from eligible commodities exported from the EU would be low.

The 2001-2002 outbreaks in France and Spain were not as extensive as the 1997-1998 epidemic in the EU. APHIS considers France and Spain to have detection, control, and eradication capacities similar to the EU Member Countries previously recognized as low-risk for CSF. Therefore, APHIS considers the risk of importation of CSF virus in swine and swine products from France and Spain to be low based on the demonstrated ability of these Member Countries to effectively contain CSF outbreaks in domestic swine.

Based on the assessment that France and Spain are low-risk for CSF and therefore recognized as equivalent to the regions of the European Union evaluated in the 2000 Risk Analysis [4], the exposure and consequence assessments, and risk estimation as discussed in the former document are applicable.

In the 2000 Risk Analysis, APHIS recognizes that “should CSF be introduced into the US, the consequences would be significant. Not only would the costs of eradication be extremely high, but the cost in trade would be significant.” However, the estimates reported in the 2000 Risk Analysis suggest that the risk of importation with breeding swine, pork, and swine semen with mitigation (40 day quarantine with clinical observation) is extremely low. “Therefore, in accordance with the OIE guidelines which state that consequence assessment is not necessary if the risk associated with release and/or exposure is low [40], APHIS did not calculate the precise economic impact of biological consequences.”

## Introduction

In April 2003 APHIS, VS published a final rule recognizing much of the European Union (EU) as a region in which Classical Swine Fever (CSF) does not exist [1]. The decision-making process was based on three documents. A proposed rule [3] and a risk analysis [2] were published in 1999. The third document, a subsequent risk analysis entitled *Risk Analysis for Importation of Classical Swine Fever Virus in Swine and Swine Products from the European Union – December 2000* [4], was released in 2002 for public comment [41] and represented a revision of the previous 1999 risk analysis.

The 1999 risk analysis had assessed the probability of incursion of CSF in breeding swine, swine semen, pork and pork products from the EU. Probability values estimated included consideration of data from the most severe CSF outbreak ever reported in the EU, the 1997-98 European epidemic which began in Germany, dispersed widely in the Netherlands and subsequently spread to other EU Member States. The rule defined mitigations considered appropriate, based on the risk analysis, for each commodity.

The revisions in the 2000 risk analysis focused on spatial and temporal aspects of CSF spread within the EU. The analysis was revised to address comments that were elicited in response to the 1999 risk analysis. VS management decided, based on the results of both analyses, several site visits to the region and extensive documentation submitted on the EU as a whole [42], that most of the EU member states under consideration in the rule (including the Netherlands) could be considered as low-risk for CSF. The rule allowed the export of breeding swine, swine semen and fresh pork, as long as appropriate commodity-based mitigations were applied.

An underlying assumption of the analyses was that, because CSF was endemic in feral swine in several parts of the EU, outbreaks in domestic swine would continue to occur within the EU. However, given that assumption, VS concluded that the veterinary infrastructure, surveillance and control measures existing in the EU were sufficient to detect and control those outbreaks before infected animals or products could arrive in the US.

The final rule recognized certain *kreis* within Germany and *Regions* in Italy as regions in which CSF was not known to exist [1]. The rule regionalized Germany and Italy because subnational administrative units had been defined in the 1999 proposed rule. Subnational administrative units were not defined for other Member States.

Prior to publication of the final rule, however, CSF outbreaks occurred in France, Spain, and Luxembourg. Because a subnational administrative unit had not been defined for these Member States, these entire countries had to be considered as entities. Therefore, these 3 member states were excluded from the final rule. During the same period, CSF outbreaks also occurred in certain *kreis* in Germany, so those *kreis* also were also excluded in the final rule. APHIS intends to evaluate Luxembourg and the excluded German *kreis* in a subsequent risk assessment.



For the purposes of CSF regionalization, this analysis seeks (1) to establish whether the risk of CSF viral incursions from export of breeding swine, swine semen, and fresh pork from France and Spain is such that APHIS can include them in the EU region defined in 2003 in which CSF is not known to exist; and (2) to describe the smallest administrative unit within France and Spain that could be the basis for regionalization in the event of future disease outbreaks.

Accepting the underlying assumption and conclusions from the original assessment, it would be necessary for the CSF situation (e.g. number of premises affected, spread of disease, etc.) to exceed the severity of the 1997-98 European epidemic for the risk to be considered unacceptable.

Because this constitutes a re-assessment of characteristics in the region (i.e. the EU), APHIS, VS did not conduct a separate 11 factor analysis as defined in 9 CFR 92.2 [5]. Rather, it focused on the ability of the veterinary authorities in France and Spain to detect, control and eradicate disease.

## Objective

The objective of this review is to evaluate the risk of importing CSF virus in breeding swine, swine semen, pork and pork products from France and Spain. This evaluation constitutes a follow-up to the previous evaluation of the CSF status of the European Union, *Risk Analysis for Importation of Classical Swine Fever Virus in Swine and Swine Products from the European Union – December 2000* [4]. The previous evaluation was conducted to assess the risk of recognizing the European Union as a region in which CSF is not known to exist.

The 1999 APHIS rule [3] proposed to regionalize the EU by recognizing much of it as a region in which CSF is not known to exist. Because (1) CSF broke out in France, Luxembourg, Spain and certain *kreis* in Germany after the 1999 proposed rule and before a final rule was published and (2) the proposed rule had not defined subnational administrative units for France, Spain and Luxembourg, the 3 Member States and certain *kreis* in Germany were not included in the EU region identified in the final rule [1]. This rule, which was published April 7, 2003 defined regions within the EU in which CSF is not known to exist.

This review will provide the basis for APHIS to evaluate the risk of including France and Spain as part of the region within the European Union recognized as a region in which CSF is not known to exist. When appropriate, APHIS intends to conduct subsequent reviews as the basis for similar evaluations of other areas within the EU that have not been recognized.

## APHIS approach to regionalization

In preparation for the evaluation and the site visit, APHIS, VS posed a list of topics for each member state to address [see Table 1]. These were identified as critical to an evaluation of effectiveness of surveillance and control activities taken before and in association with the outbreaks.

**Table 1. Information requested from France, Spain, and Luxembourg for CSF evaluation.**

- Applicable legislation
- Chronology of events associated with the outbreak
- Origin of disease and etiological agent
- Epidemiology of introduction and spread, including:
  - type of operation
  - extent of spread
  - special effects of husbandry, if applicable
- Eradication and control actions taken, such as:
  - establishment, measures implemented in, and maintenance of surveillance and control zones
  - relevant protocols and contingency plans
  - movement controls
  - release of restrictions
- Traceback capabilities
- Slaughter policy
- Animal demographics and movement characteristics if relevant to outbreak
- Time to detection
- Effectiveness of these actions
- Surveillance activities: before, during, and after the outbreak
- Diagnostic approach
- Restocking
- Import policies for high risk products
- Swill feeding
- Lessons learned from the outbreak
- Changes made as a result of lessons learned
- Special considerations, such as:
  - level of preparation
  - import restrictions on high risk products
  - compliance
  - other
- Definition of a region (optional but recommended)
  - definition of administrative unit with effective oversight of animal movement, surveillance, and disease control activities
  - infrastructure implementing oversight and control for the unit
  - disease surveillance, control, and eradication activities associated with the unit

Source: APHIS [43]

France and Spain provided information relevant to these topics [6, 44]. Although this report does not address each of these items individually for each Member State, the information is provided throughout the discussion.

In addition, a team of APHIS personnel conducted a site visit to validate the information provided by France and Spain and to evaluate the status of their CSF eradication efforts.<sup>2</sup> The site visit schedule is presented as Appendix 1. Observations made and information

<sup>2</sup> During the February 2003 site visit, the APHIS team also traveled to Luxembourg. However the evaluation of the CSF status of Luxembourg has been delayed due to a recent CSF outbreak in a domestic swine herd in that Member State. APHIS intends to evaluate Luxembourg at a later time.

provided by veterinary officials during the visit to France and Spain [6-8, 39, 44, 46, 47], published literature [9], EU legislation [10-31, 48-66], EU veterinary inspection reports [32-36], and reports to the OIE [37, 38] constitute the supporting documentation for this evaluation.

## European Union regulations related to CSF in France and Spain

Measures to prevent and control CSF infection in live animals are proscribed in several European Union regulations [Table 2]. These regulations include such requirements as: compulsory notification of CSF outbreaks; internal veterinary certifications for transport of animals; procedures for management of outbreaks (including movement controls, stamping-out and emergency vaccination policies); eradication plans to address spread of CSF from infected wild boars; and requirements for quarantine and testing of breeding swine and swine semen donors. These regulations are designed to control CSF transmission within and between Member States and are consistent with international standards set by OIE [45]. These are harmonized and binding on all Member States.

**Table 2. European Union Regulations relevant to the control of CSF in France and Spain**

- Veterinary and zootechnical checks applicable in intra-community trade in certain live animals and products, Council Directive 90/425/EEC, June 26, 1990 [17], as last amended by 2002/33/EC, October 21, 2002 [18].
- Animal health conditions and veterinary certifications for imports of live bovine and porcine animals from certain third countries, Commission Decision 2002/199/EC, January 30, 2002 [30], as last amended by Commission Decision 2002/578/EC, July 10, 2002 [31].
- Community measures for the control of classical swine fever, Council Directive 2001/89/EC, October 23, 2001 [11], as corrected, June 27, 2002 [16].
- CSF diagnostic manual, Commission Decision 2002/106/EC, February 1, 2002 [10].
- Approving certain contingency plans for the control of CSF, Commission Decision 1999/246/EEC, March 30, 1999 [14], as last amended by 2000/113/EC, January 14, 2000 [15].
- Protective measures relating to CSF in Belgium, France, Germany and Luxembourg, Commission Decision 2003/526/EC, July 18, 2003 [13].
- CSF eradication plan in feral pigs in Moselle and Meurthe-et-Moselle, Commission Decision 2002/626/EC, July 25, 2002 [12].
- Protective measures relating to CSF in Spain (protective measures expired on July 31, 2002), initiated though Commission Decision 2001/457/EC, June 14, 2001 [25], repealed and replaced through subsequent Decision ending with Commission Decision 2001/925/EC [26], as last amended by 2002/530/EC [27].
- Special pork marketing regulations implemented for humane consideration of swine in CSF control zones in Spain (last of these special measures expired on April 30, 2002): Commission Decision 2001/550/EC, July 20, 2001 [19], as last amended by 2001/735/EC, October 17, 2001 [20]; Commission Decision 2002/32/EC, January 14, 2002 [21], repealed by 2002/41/EC, January 21, 2002 [22], repealed by 2002/209/EC, March 11, 2002 [23]; and Commission Decision 2002/33/EC [24].

Source: *Official Journal of the European Communities*, [http://www.europa.eu.int/eur-lex/en/search/search\\_lif.html](http://www.europa.eu.int/eur-lex/en/search/search_lif.html)

## **Risk assessment format**

The format of this document is consistent with OIE guidelines [40]. These guidelines define four components of a risk assessment: a release assessment addressing the probability that affected animals or products will be exported from the region being evaluated (France and Spain) to the region performing the evaluation (the US); an exposure assessment addressing the biological pathways necessary for exposure in the US; a consequence assessment describing the consequence of exposure; and a risk estimation.

Of note is that the OIE guidelines indicate that if either a release or exposure assessment demonstrates no significant risk, the risk assessment may conclude at that step in the process. As this analysis is supplemental to the 2000 Risk Analysis [4], the exposure and consequence assessments, and risk estimation in that document would be applicable.

## Main findings

### FRANCE

#### *Organization and infrastructure* [6, 33, 46, 47]

France has a centralized government. In regards to animal health issues, responsibility for policy development and management rests with the *Direction Generale de L'Alimentation* (DGAL), the central competent authority (CCA). DGAL is an agency within the *Ministere de l'Agriculture, de l'Alimentation, de la Peche et des Affaires Rurales* (MAP). DGAL develops animal health policy translating European Commission (EC) legislation into national legislation, devises animal disease contingency plans, and coordinates implementation of regulations with regional authorities.

France is divided administratively into 96 departments (*departements*) which are grouped into 22 regions. Each department is headed by a Prefect (*Prefet*), who is the appointed representative of the French government. Departments are divided into *cantons* (equivalent to US counties) which are further subdivided into *communes* (municipalities). The *commune*, the smallest administrative unit within France, is headed by a Mayor (*maire*) who acts under the supervision of the Prefect. The power of implementation in the departments of the decisions adopted at the central level falls to the Prefect and to the Mayors, who are responsible for ensuring order, public safety and health (including animal health disease control) for the *communes*.

Within each department there is a *Direction Departementale des Services Veterinaires* (DDSV) which serves as the regional competent authority (RCA). These services are responsible for implementation and enforcement of the animal health regulations within the department. Each DDSV is under the direct authority of the Prefect.

The staff of the both the CCA and the RCA are full time government employees. However, the RCA is assisted by private veterinary practitioners (*Veterinaires Sanitaires*) who fulfill some of the necessary testing and reporting tasks. They serve much like APHIS-accredited veterinarians do in the United States, and are obligated to report suspicion of notifiable animal diseases.

*Agence Francaise de Securite Sanitaire des Aliments* (AFSSA) is the National Reference Laboratory (NRL). AFSSA has two sites for CSF analysis, virology samples are processed in Maisons-Alfort and serology samples in Ploufagan. AFSSA, a government agency, serves several agencies including MAP.

Department authorities are responsible for the operation of regional laboratories. There are 14 departmental laboratories trained and audited by AFSSA for CSF serological analysis.

### Administrative Unit [6, 47]

During the site visit, the APHIS team visited the headquarters of DGAL in Paris and the DDSV in Metz, Department of Moselle (Department 57) to observe the functions of the central and regional authorities. The team also visited the pig holding which experienced the CSF outbreak in April 2003, located in Chemery-les-Deux, the local *commune*. Veterinary surveillance and control activities at these levels appeared to be effective. APHIS concludes that for the purposes of regionalization the appropriate administrative unit for France is the *commune*.

### Animal movement controls [6, 33]

Movement controls in France allow accurate trace-out and trace-back of disease. Farm registration is mandatory and each holding is assigned a unique identification number. Animal identification is also compulsory requiring breeding swine to be identified with a unique identification number (either by ear tag or tattoo) and fattening swine to be identified using the holding registration number (by slapmark). This information is maintained within departmental and national databases.

Swine owners are required by national (and EC) legislation to keep a register containing information on all entries and exits of animals from the holding. For movements between breeding and fattening holdings within France, pigs must be accompanied with a health certificate (a requirement of the ongoing Aujeszky's disease program). [See Appendix 2 for an example of this document.] For movement to slaughter (within France), no documents are required although usually pigs are accompanied by a commercial document issued by the abattoir, which records these movements in their databases.

A health certificate issued by an official veterinarian is required for movement to other EU Member States [30]. Movement of animals to other EU Member States requires prior notification reported through the ANIMO system.<sup>3</sup> Such documents are subject to random control inspection anywhere along the route while in transit.

### *CSF outbreaks in domestic swine* [6, 32, 33, 37, 38]

Prior to April 2002, the last reported CSF outbreak in domestic swine of France occurred in February 1993. The domestic swine herd of France had remained CSF-free for a period lasting 9 years, until a single outbreak was confirmed on April 29, 2002 [6, 37, 38].

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<sup>3</sup> ANIMO is a computerized system, mandated by European Union law, to track animal and animal product movement between Member States as well as for tracking imports from third countries into the EU. Data are entered by local veterinary authorities within each Member Country and shared over a network with the rest of the EU. The system is administered by a private contractor with oversight by the EC and the EU Court of Auditors (discussed in [4]).

The 1993 outbreak was attributed to the illegal feeding of contaminated swill. Feeding of swill to pigs has been prohibited in France since July 1990 [6]. Compliance with this regulation appears good as France licenses and inspects feed producers and sanctions those who fail to comply.

The 2002 outbreak occurred on a holding with 395 piglets in Chemery-les-Deux, Department of Moselle (Department 57). The outbreak was not related to swill feeding but probably to human and animal movement. Since then, there have been no further CSF outbreaks in the domestic swine herd of France.

### *CSF in wild boars*

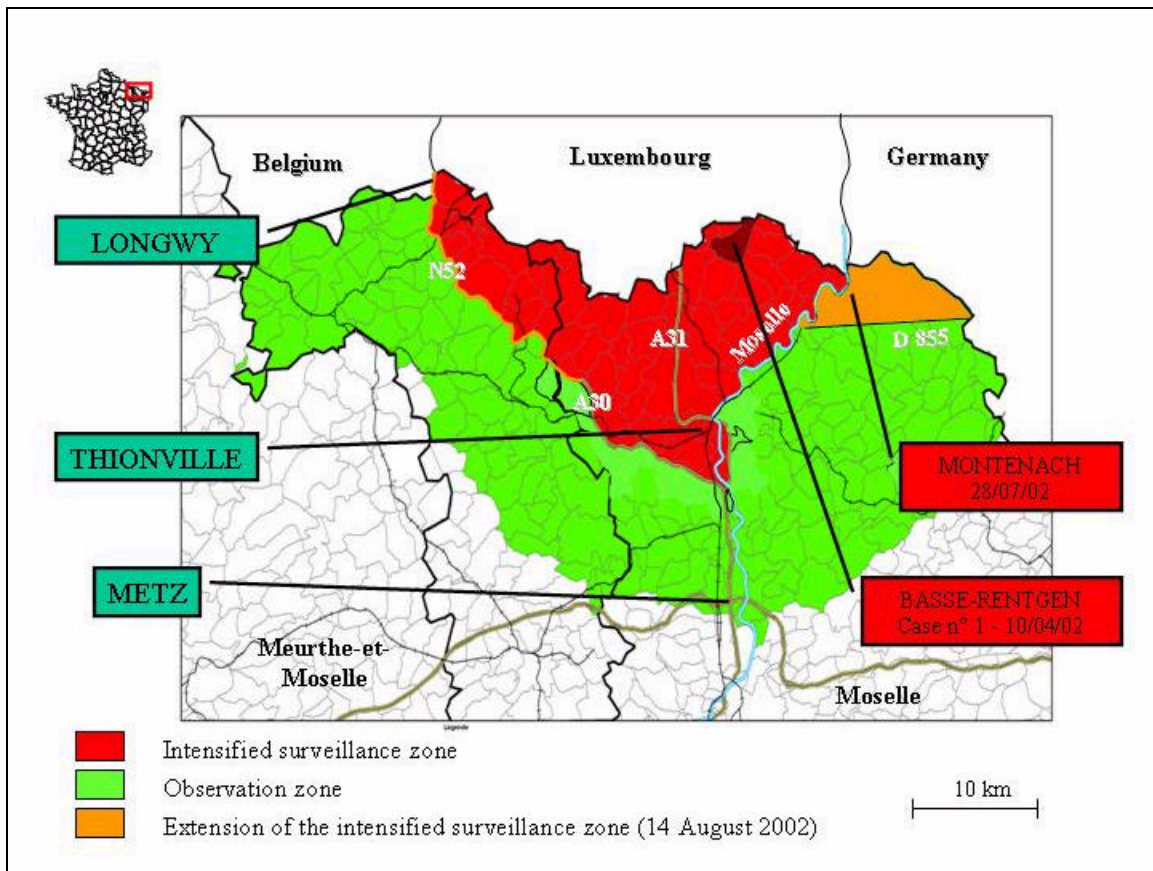
#### Surveillance [6, 11, 37, 38, 44]

French officials have been aware for many years of the risk of CSF virus spreading from infected wild boars to domestic swine, particularly in areas bordering Luxembourg and Germany where outbreaks in wild boars and domestic pigs have been reported. To address the risk, France has conducted serological surveillance of both wild boars and domestic swine in high risk areas.

For example, because disease had been detected in wild boars in Germany and Luxembourg, in October 2001 France established a 10-km-wide wild boar surveillance zone along the borders with Luxembourg and Germany, from Ardennes Department to Bas-Rhin Department. Epidemiological observations indicated that CSF was spreading south from Germany toward France in the wild boar population. The surveillance program stipulated that, within the surveillance zone, samples from all wild boars found dead and from 20% of wild boars killed in hunts are to be tested for CSF.

On April 10, 2002, samples from a dead wild boar, tested as part of the surveillance sampling in the district of Basse-Rentgen, Moselle Department near the border with Luxembourg, tested positive for the CSF virus (see Figure 1). Following this discovery, France intensified the wild boar CSF control plan already in place. The “intensified surveillance zone” (wild boar infected area), and a peripheral “observation zone” define the infected wild boar restriction area. The boundaries of the intensified surveillance zone were extended in August 2002 when an infected boar was discovered in the observation zone.

According to a report filed by DGAL with OIE, “in these zones, the plan provides for serological surveillance of wild and domestic pigs, measures to control wild pig populations and measures to protect pig farms so as to isolate them from any contact with wild boar” [37].

**Figure 1.**

Source: OIE [37] [http://www.oie.int/eng/maps/isa15\\_35\\_map.jpg](http://www.oie.int/eng/maps/isa15_35_map.jpg).

The wild boar intensified surveillance and observation zones were fairly large to provide a conservative approach to surveillance. Restrictions on the hunting of wild boars in the area were implemented. In the infection zone, all hunting was prohibited. In the observation zone, hunting with dogs was prohibited and driving hunts, a form of hunting where animals are driven toward stationary hunters, were banned.

Following this strategy, France seeks to discourage wild boars from roaming more widely with the belief that in doing so the CSF virus will develop freely within the wild boar population. DGAL is basing this approach on the expectation that while allowing natural immunity to develop in the older animals, susceptible young animals would die from the disease, thus creating an immune population to act as a barrier to further CSF spread [6, 37].

#### Vaccination strategy-effect on surveillance [6, 12, 13, 28, 29, 37, 38]

Of note is that the French approach to eradication of CSF in wild boars differs significantly from measures enacted by Germany and Luxembourg. Both Germany and



Luxembourg encourage hunting to eliminate infected animals, and both countries are using vaccine baits to establish immunity in the wild boar population.

The vaccine which Luxembourg and Germany are using is not a marker vaccine. Therefore, it will not be possible to differentiate between infected and vaccinated animals. For that reason, upon the request of France, the EU has created a buffer zone in Luxembourg and Germany along their border with France in which vaccine baits are not applied. It remains to be seen which strategy will be more effective. However, it is hoped that vaccination of wild animals will stimulate a level of immunity sufficient to reduce this reservoir of infection.

Surveillance in wild boars continues in France. As of February 2003, the last positive serology test had been recorded in December, and the last positive virology test had been recorded in November 2002 [6]. According to OIE reports, France has identified a total of 126 positive wild boars since April 10, 2002 [38]. All of these animals were found in the infection zone [6].

#### Movement restrictions due to CSF in wild boars [6, 11-13]

Additional movement restrictions were applied to domestic pigs in the wild boar infection and observation areas. EC legislation prohibits a Member State from engaging in the trade of live pigs, swine semen, ova and embryos from areas identified as having CSF infection in wild boars to areas in other European Member States [13]. The EC allows an exception for movement of domestic pigs between adjacent Member States under certain conditions and with the approval of the Member State concerned, as long as the pigs originate from holdings within a wild boar infection or observation zone common to both Member States. This includes movement of pigs going directly to slaughter. France does not allow this exception for movement of pigs from adjacent states under restriction for CSF in wild boars [6].

EC legislation further stipulates that all swine within wild boar infection and observation zones moving to slaughter are subjected to clinical inspection. In addition, Member States may allow movement of pigs from holdings within these zones to other areas in the same Member State if both clinical examinations and serological tests for CSF show negative results.

Serological testing of animals within the infection zone is funded by the French government, thus providing an incentive for farmers to comply with the test requirements in the infected zone. In contrast, testing in the observation zone is paid for by the individual farmer.

Additional protection measures were applied in the infected regions. For example, double fencing was constructed for 2 outdoor farms in Department 57. These are financed partly with government subsidies, although the farmers hold the primary responsibility. Efforts to educate hunters were also made.

*Characteristics of virus and epidemiological investigations* [6, 37, 44]

The CSF virus involved in the French outbreak was genotype Rostock 2.3 strain, identical to the virus responsible for the epizootics in wild boars in various regions in Germany, Luxembourg, Belgium and France. It is also the same strain of virus associated with outbreaks in domestic pigs in Germany and Luxembourg. The initial molecular sequencing of the virus was performed by AFSSA and confirmed by the Community Reference Laboratory for CSF in Hanover, Germany.

While the source of the virus seems to have originated in infected wild boars, no epidemiological link with wild boar infection could be made. However, a likely hypothesis suggests that the exposure resulted from contact with either a person or vehicle contaminated with the virus. The virus was probably introduced on April 12 onto the affected premises by fomites, perhaps on the clothing or personal vehicle of a visiting farmer from Germany [6, 44].

Epidemiological investigations suggested that the introduction occurred when a farmer from Germany visited the holding in France on April 12 to select pigs for purchase. This farmer had contact with a CSF-infected farm in Germany and he lived in an area known to have CSF-infected wild boars. An alternative hypothesis was that the introduction occurred on April 20 when the same farmer returned to transport the pigs back to Germany. While the truck used to transport the pigs was contracted from a source in France, the farmer drove his own personal vehicle onto the premises.

A CSF outbreak was confirmed on the holding in Germany which received piglets from the affected holding in Chemery-les-Deux [6, 37, 44]. Although the diagnosis on the German farm was the result of the trace-out investigation of the French outbreak, it could have resulted either as a secondary spread (infected piglets) or from exposure to the same contaminated person or vehicle implicated in the French outbreak. Confirmation of both the outbreaks in France and Germany was made at essentially the same time.

*Response to the outbreak* [6, 10, 11, 37, 42, 44]

In late April 2002, a CSF outbreak occurred on a domestic holding in Chemery-les-Dueux, Moselle Department. Earlier that month, April 10, an infected wild boar had been confirmed in Basse-Rentgen, also in Moselle Department. Although the holding in Chemery-les-Deux was located outside the established wild boar surveillance zone, separated by a natural barrier (highway and river), it was located within the wild boar observation zone.

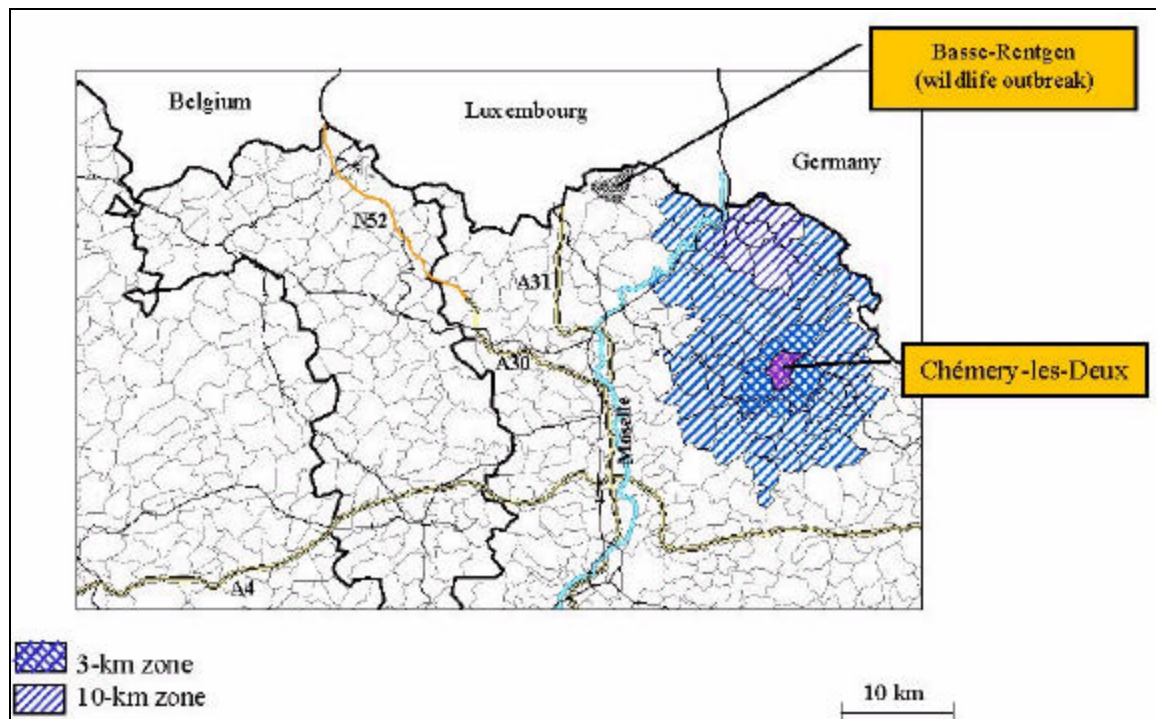
Clinical signs resulting in deaths of 2 piglets were observed on April 20, with deaths increasing over the next few days. Notification of CSF disease suspicion is mandatory in France, and as evidenced in this case, compliance is good. A clinical diagnosis of CSF infection was made on April 24 and French authorities immediately quarantined the

premises, implemented protection (3 km) and surveillance (10 km) zones, established movement restrictions, and began culling pigs on the affected holding.

Samples taken from pigs on the suspect premises were subjected to ELISA-Ag and PCR-RT tests. Positive results were reported on April 26, and presence of CSF virus was confirmed on April 29.

The movement control measures were enforced by the DDSV under the authority of the Department prefect. French police and customs officers assisted with enforcement of control measures, randomly stopping vehicles carrying animals to check compliance. On the highway to Luxembourg, all vehicles were stopped by a roadblock. In addition, signs were posted in the restricted zones and police vehicles monitored the regions. The boundaries of the protection and surveillance zones are illustrated in Figure 2. This type of enforcement is characteristic of French infrastructure.

**Figure 2.**



Source: OIE [37], <http://www.oie.int/eng/maps/FRAppcA.jpg>. Note: Protection zone is 3-km and surveillance zone is 10-km.

Movement controls that were instituted in protection and surveillance zones are summarized in Table 3. In addition, cleaning and disinfection measures were applied on holdings throughout the protection zone. Boots as well as vehicles had to be cleaned and disinfected at each holding. Disinfection boot baths remained in evidence at the holding

visited by the APHIS team, and locations where vehicle disinfection facilities had been identified, although the actual facilities had been dismantled prior to the site visit.

<b>Table 3. Certain controls within protection and surveillance zones</b>			
<i>Type of holding</i>	<i>Movement Restrictions</i>	<i>Sanitary Rules</i>	<i>Cleaning/ Disinfection</i>
<b>PROTECTION ZONE</b>			
All	<b>PIGS</b> Prohibition of movement or transport	Veterinary visit  Immediate declaration to the veterinary services of any mortality or morbidity in pigs	Compulsory for vehicles going into or out of a holding
	<b>OTHER SPECIES</b> Movement authorized by veterinary authorities only for direct transport to either a slaughtering house or a holding without pigs		
	<b>MANURE</b> Prohibition of transport and spreading		
<b>SURVEILLANCE ZONE</b>			
Holding with pigs	<b>PIGS, OTHER FOOD ANIMALS, MANURE</b> Prohibition of movement or transport	Veterinary visit  Immediate declaration to the veterinary services of any mortality or morbidity in pigs	Compulsory for vehicles going into or out of a holding
Holding without pigs	No restrictions		

Source: DGAL [44]

Epidemiological investigations were conducted and trace-backs were accomplished primarily through records maintained by owners on individual holdings. French authorities stated that even small holdings in France maintained good records [6].

Eleven contact holdings were identified. One holding was located within the surveillance zone, ten were outside either the protection or surveillance zones (5 in Department 57 and 4 in adjacent Department 54), and one was identified in Germany (Beuren). The German officials were immediately notified, and CSF was confirmed on the contact holding identified in Germany.

Because of the outbreak in Moselle (Department 57) and contacts traced to Meurthe-et-Moselle (Department 54), movement of animals out of these areas was prohibited on April 26. Of interest, the pig population in these provinces constitutes less than 1% of national pig production in France (based on carcass weight). These departments are located nearly 400 miles from the largest pig-producing regions (Bretagne with 57% and Pays de Loire with 12%). The relatively low swine population density in the region may have been a factor contributing to the limited spread of disease.

Clinical examinations of animals on the contact holdings were conducted, and samples were taken for serological testing and virus isolation. Tests results of samples taken from all contact holdings in France were negative.

Restrictions on contact holdings were lifted May 17 for Department 54 and May 22 for Department 57.

To confirm that disease had been controlled in the region, serologic surveillance was conducted in the months after the outbreak. Between May 27 and June 4, 120 holdings under quarantine in the surveillance zone were sampled (775 pigs out of a total of 5292) with all negative results. Between May 3 and June 6, 12 holdings under quarantine in the protection zone were sampled (58 pigs out of a total of 146), also all with negative results.

The protection and surveillance zone restrictions were removed on June 12, 2002.

After culling, cleaning and disinfection, a period of 7 weeks transpired before controlled restocking of the affected premises commenced.<sup>4</sup> After the 7 week period, 50 pigs were initially restocked as sentinel animals. These animals were clinically observed by a veterinarian every other day and serological samples were taken weekly. These animals were slaughtered and rendered (none were processed into pork for consumption). No evidence of CSF infection was detected. Full repopulation of the affected holding was allowed to commence.

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<sup>4</sup> Council Directive 2001/89/EC specifies that reintroduction of pigs shall not take place until at least 30 days after completion of the cleaning and disinfection operations have been completed. [11]

*Release assessment – France [4, 6, 37, 44]*

The APHIS 2000 risk analysis identified the risk of CSF spread through movement of domestic animals (primarily pigs for fattening or slaughter); transmission from infected wild boars; movement of people, vehicles or equipment contaminated with virus; or distribution of contaminated semen. Although the analysis did not differentiate among these pathways, it concluded that the ultimate source for all these pathways would most likely be infected wild boars. The second part of the analysis (spatial and temporal considerations) observed that once CSF is introduced, spread was more extensive in regions with high densities of domestic swine than in regions with low densities. With the exception of CSF spread by contaminated swine semen, each of these factors played a role in the epidemiology of the 2002 CSF outbreak in France.

In April 2002, suspicion of CSF infection was raised shortly after death of piglets occurred on this farm. French officials acted quickly to detect and confirm the virus. This was possible because of good compliance with reporting requirements. After disease was suspected, France established control mechanisms that limited spread of the virus. In fact, disease was confined to a single holding in France with one possible secondary holding in Germany.

The outbreak occurred in an area with low swine population density and an area in which CSF awareness was elevated due to proximity to wild boar CSF control zones. The high-density swine production areas of France are located more than 400 miles to the southwest.

All of these factors – heightened awareness, ongoing wild boar CSF surveillance, introduction into a low-density swine population, and good compliance with CSF control measures – had mitigating effects on the control of this outbreak.

With no further outbreaks occurring and with successful restocking of the affected premises under strict supervision and surveillance, APHIS concludes that France effectively contained this outbreak. The circumstances of this outbreak (infected wild boars as likely CSF source; virus spread via contaminated person or vehicle; limited spread due to the outbreak occurring in a low-density swine population area) are consistent with conclusions reached in the APHIS 2000 risk analysis. As such APHIS considers the importation of swine and swine products from France to be low-risk for CSF.

## SPAIN

### *Organization and infrastructure* [7, 8, 11, 34-36]

The *Ministerio de Agricultura, Pesca y Alimentacion* (MAPA) is equivalent to the United States Department of Agriculture. Within MAPA, the central competent authority (CCA) for animal health in Spain is the *Subdireccion General de Sanidad Animal* (SGSV).

The CCA is not the sole animal health authority in the country. In addition to the central government, Spain is comprised of 17 autonomous regions, each with its own government. The autonomous regions are further divided into provinces which are comprised of *comarcas*, local administrative units (the Autonomous Region of Cataluna is divided into 4 provinces and 41 *comarcas*).

The CCA works as a liaison with the EC, translating EC legislation into national legislation. National legislation is then implemented by Royal Decree. The CCA also coordinates policies with the Autonomous Regions to ensure continuity of application and enforcement across the 17 regions.

Spain has a network of National and regional laboratories. The National Reference Laboratory (NRL) for Spain, located in Algete (with a branch in Sante Fe in southern Spain), provides confirmation, coordination and instruction to the Regional Laboratories based in the Autonomous Regions. Results are reported to the European Commission and OIE. The regional laboratory of Cataluna is located in Barcelona. There are also 9 local laboratories in Cataluna including one in Osona. Local laboratories conduct most basic tests for List A and program diseases, including virus isolation. CSF virus typing for the EU is handled by the OIE Reference laboratory located in Hanover, Germany.

### Administrative unit [7, 8]

During the site visit, team members visited MAPA, SGSV headquarters in Madrid, the Cataluna regional authority (RCA) office in Barcelona, and the local *comarca* office in Osona to observe functions of the various levels. Spanish officials indicated that the veterinary infrastructure in Cataluna was representative of the infrastructure of the other 16 autonomous regions. Veterinary surveillance and control activities at this level appeared to be effective.

Within Cataluna, there is a total of 197 official veterinarians working for the RCA. Each *comarca* has at least one official veterinarian working in the local office, more in areas with high-density animal populations.

The local office maintains pig census and holding information which is reported and summarized by the RCA. Complete census information is obtained every 10 years with veterinary officials going door-to-door to gather information. This information is updated yearly through statistical sampling based on reviews of holding registers that

record animals entering and leaving the premises. The local office also issues and maintains records of movement certificates.

APHIS concludes that the *comarca* is the appropriate administrative unit for the purpose of regionalization in Spain.

#### Animal movement controls [7, 8, 11]

Movement controls in Spain are effective and allow accurate trace-back of disease. There are two kinds of documents needed to move animals within Spain [see Appendices 3 and 4 for examples of these documents]. For movement within the autonomous region, a voucher is needed. For movement outside of the autonomous region but within Spain, a permit issued by an official veterinarian is needed. A health certificate, also issued by an official veterinarian, is required for movement to other EU Member States. Movement of animals to other EU Member States also requires prior notification reported through the ANIMO system. These documents are subject to random control inspection anywhere along the route while in transit.

Spanish authorities are proactive in their approach to disease surveillance and epidemiological investigations. To assist with epidemiological investigations and emergency response planning, Spanish authorities are developing a national database to maintain identification, census, surveillance, and movement records for all animals within Spain (this is different system from the ANIMO system which tracks movement between Member States). This information will be gathered from various sources including the Autonomous Regions and border stations. Cattle are identified individually in the database. Other species (e.g. swine, sheep and goats) are identified by the holding. The record-keeping system is intended to aid in compliance with a new EU rule being developed that would require individual identification of farm animal breeding stock. Already, regional authorities have census information and geographical (GPS) coordinates for all holdings. These data will be incorporated into the national database so that ultimately it should be possible to trace disease exposures, model disease spread, and support detailed animal health risk analyses.

#### *Domestic swine production* [4, 7, 35]

In Spain, pork production is a significant component of the agriculture sector, constituting 35% of its livestock economy. Spain is the second largest pig producer in the EU (following Germany). Growth of the industry was substantial between 1995 and 2001. Over half of Spain's swine production is concentrated in three autonomous regions, Catalonia, Aragon and Castilla-Leon. In these areas, swine production is characterized as high-density where there is a concentration of larger specialized multi-site units. These intensive holdings are linked by service contracts, with "integration companies" providing feed, animal transport and various other management services including vaccination and insemination.



Cataluna, the autonomous region in which the most of the outbreaks occurred, is one of the largest pig-producing regions in Spain. It contains both large and small holdings in close proximity, although, as a general rule, small farms are closer to urban areas.

Osona, the *comarca* within Cataluna which experienced the greatest losses during the epidemic, has a particularly high-density of holdings in a small area (around outbreak 2001/30, there were 5,525 pigs in a 1 km radius on 12 farms). In a rectangle 30 x 15 kms around the area of the outbreaks, it is reported there are approximately 2000 pig holdings. Osona also contains a slaughterhouse that receives animals from throughout Spain as well as feed production facilities. Products originating from the slaughterhouse include processed meat and sausages.

In its 2000 risk analysis, APHIS considered the possibility that swine density could be a factor in CSF epidemiology. [4] While observations from the 1997-1998 CSF epidemic did not indicate that CSF outbreaks might occur more frequently in areas with high-density swine populations than in areas with low-density swine populations, observations did show that the extent of secondary spread is greater after CSF is introduced into areas with high-density swine populations than when introduced into areas with low-density. The high swine population density of Cataluna likely was a risk factor for spread of disease in the 2001-2002 CSF epidemic [39].

#### Risk mitigations relating to swine population density

Spanish authorities are attempting to control disease risks associated with high swine population density. Current Spanish law requires new large swine holdings to be located at least 1 km away from other large holdings [7]. MAPA intends to extend this regulation to apply to existing holdings as well. To comply, it is anticipated that several existing holdings may join together into a single production unit.

#### *CSF outbreaks in domestic swine*

Previous outbreaks of CSF occurred in Spain during the 1997-98 epidemic [4, 37, 38]. The last case in that series was in July 1998. Data from those outbreaks were discussed in the APHIS 2000 risk analysis.

Subsequently, after an epidemiological silence of nearly three years, a CSF epidemic began when an outbreak was confirmed on June 14, 2001 at a farm in the town of Soses, province of Lerida (Autonomous Region of Cataluna) [7, 39]. Over the next eleven months (June 2001 – May 2002), a total of 49 outbreaks [see Table 4] was recorded affecting Autonomous Regions of Cataluna, Valencia and Castilla La Mancha.

The 2001/2002 epidemic occurred in two waves: the first was from June 14 to September 19, 2001, with 29 outbreaks primarily in the Lerida, a province in the autonomous region of Cataluna in northeastern Spain. By November 24, 2001, the EC

considered the situation resolved and all movement restrictions were lifted. However, a second wave of outbreaks started on December 5, 2001 in Osona, a *comarca* in the province of Barcelona, also in Cataluna. The last case was confirmed on May 6, 2002. Since then, no further CSF cases in Spain have been reported [37].

**Table 4. Summary of outbreaks in Spain during 2001 – 2002**

Outbreak N°	Region	Province	Comarca	Municipality	Date Confirmed	Type of Holding	Animals Sacrificed	Date of Sacrifice
2001/1	Cataluna	Lerida	Segria	Soses	14-Jun-01	Fattening Farm	2,053	14-Jun-01
2001/2	Cataluna	Lerida	Pla D'Urgell	Golmes	18-Jun-01	Fattening Farm	745	16-Jun-01
2001/3	Cataluna	Lerida	Noguera	Vilanova de L'Aguda	18-Jun-01	Fattening Farm	1,351	16-Jun-01
2001/4	C. Valenciana	Castellon	Vinaroz	Vinaroz	18-Jun-01	Fattening Farm	877	16-Jun-01
2001/5	Cataluna	Lerida	Pla D'Urgell	Mollerusa	20-Jun-01	Fattening Farm	1,685	18-Jun-01
2001/6	Cataluna	Lerida	Pla D'Urgell	Golmes	22-Jun-01	Fattening Farm	1,324	20-Jun-01
2001/7	Cataluna	Lerida	Noguera	Penelles	22-Jun-01	Fattening Farm	3,216	21-Jun-01
2001/8	Cataluna	Lerida	Urgell	Castellsera	28-Jun-01	Farrowing	641	25-Jun-01
2001/9	Cataluna	Lerida	Segarra	Plans de Sio (Sistero)	29-Jun-01	Fattening Farm	213	25-Jun-01
2001/10	Cataluna	Lerida	Urgell	Castellsera	29-Jun-01	Farrowing	753	28-Jun-01
2001/11	Cataluna	Lerida	Noguera	Penelles	6-Jul-01	Fattening Farm	1,136	28-Jun-01
2001/12	Cataluna	Lerida	Noguera	Penelles	6-Jul-01	Fattening Farm	387	28-Jun-01
2001/13	Cataluna	Lerida	Urgell	Castellsera	6-Jul-01	Fattening Farm	373	29-Jun-01
2001/14	Cataluna	Lerida	Garrigas	Arbeca	9-Jul-01	Fattening Farm	166	28-Jun-01
2001/15	Cataluna	Lerida	Garrigas	Arbeca	9-Jul-01	Fattening Farm	845	5-Jul-01
2001/16	Cataluna	Lerida	Segarra	San Guim de Freixenet	10-Jul-01	Fattening Farm	61	5-Jul-01
2001/17	C. Valenciana	Valencia	Chelva	Alpuente	11-Jul-01	Farrowing	2,032	10-Jul-01
2001/18	Castilla la Mancha	Cuenca	Landete	Talayuelas	11-Jul-01	Fattening Farm	734	11-Jul-01
2001/19	C. Valenciana	Valencia	Liria	Villamarchante	12-Jul-01	Fattening Farm	230	11-Jul-01
2001/20	C. Valenciana	Valencia	Chelva	Alpuente	12-Jul-01	Farrowing	338	13-Jul-01
2001/21	C. Valenciana	Valencia	Chelva	Alpuente	17-Jul-01	Farrowing	504	17-Jul-01
2001/22	Castilla la Mancha	Cuenca	Landete	Talayuelas	19-Jul-01	Fattening Farm	591	12-Jul-01
2001/23	C. Valenciana	Valencia	Chelva	Titaguas	20-Jul-01	Fattening Farm	1,500	20-Jul-01
2001/24	C. Valenciana	Valencia	Chelva	Alpuente	23-Jul-01	Fattening Farm	739	12-Jul-01
2001/25	C. Valenciana	Valencia	Chelva	Tuejar	9-Aug-01	Farrowing	3,824	9-Aug-01
2001/26	Cataluna	Lerida	Noguera	Penelles	24-Aug-01	Fattening Farm	1,729	24-Aug-01
2001/27	Cataluna	Lerida	Noguera	Bellmunt	5-Sep-01	Farrowing	386	5-Sep-01
2001/28	Cataluna	Lerida	Noguera	Bellmunt	19-Sep-01	Farrowing	349	8-Sep-01
2001/29	Cataluna	Lerida	Noguera	Bellmunt	19-Sep-01	Farrowing	277	15-Sep-01
2001/30	Cataluna	Barcelona	Osona	Calldetenes	7-Dec-01	Farrowing	2,764	6-Dec-01
2001/31	Cataluna	Barcelona	Osona	Folgueroles	10-Dec-01	Farrowing	4,795	8-Dec-01
2001/32	Cataluna	Barcelona	Osona	Calldetenes	10-Dec-01	Farrowing	2,148	7-Dec-01
2001/33	Cataluna	Barcelona	Osona	Sta Eugenia de Berga	27-Dec-01	Farrowing	1,922	26-Dec-01
2002/1	Cataluna	Barcelona	Osona	Folgueroles	10-Jan-02	Full Cycle	1,637	10-Jan-02
2002/2	Cataluna	Barcelona	Osona	Manlleu	11-Jan-02	Full Cycle	1,160	11-Jan-02
2002/3	Cataluna	Barcelona	Osona	Massies Voltrega	22-Jan-02	Fattening Farm	615	19-Jan-02
2002/4	Cataluna	Barcelona	Osona	Vic	24-Jan-02	Full Cycle	1,508	22-Jan-02
2002/5	Cataluna	Barcelona	Osona	Malla	24-Jan-02	Fattening Farm	137	23-Jan-02
2002/6	Cataluna	Barcelona	Osona	Manlleu	31-Jan-02	Full Cycle	1,345	30-Jan-02
2002/7	Cataluna	Barcelona	Osona	Vic	7-Feb-02	Fattening Farm	76	5-Feb-02
2002/8	Cataluna	Barcelona	Osona	Tona	22-Feb-02	Full Cycle	2,559	24-Feb-02
2002/9	Cataluna	Barcelona	Osona	Gurb	7-Mar-02	Full Cycle	4,960	10-Mar-02
2002/10	Cataluna	Barcelona	Osona	Manlleu	13-Mar-02	Full Cycle	752	14-Mar-02
2002/11	Cataluna	Barcelona	Osona	Manlleu	18-Mar-02	Fattening Farm	644	13-Mar-02
2002/12	Cataluna	Barcelona	Osona	Folgueroles	9-Apr-02	Fattening Farm	3,180	10-Apr-02
2002/13	Cataluna	Barcelona	Osona	Folgueroles	11-Apr-02	Full Cycle	8,602	12-Apr-02
2002/14	Cataluna	Barcelona	Osona	Les Masies de Roda	16-Apr-02	Fattening Farm	625	11-Apr-02
2002/15	Cataluna	Barcelona	Osona	Tarradell	17-Apr-02	Fattening Farm	210	11-Apr-02
2002/16	Cataluna	Barcelona	Osona	Santa Eulalia de Riupremier	6-May-02	Post Weaning to Fattening	1,909	30-Apr-02

Source: MAPA [7]

### *Wild boars*

Although Spain has wild boars distributed throughout the country (except in the Canary Islands), no CSF has been detected in these animals [7, 9]. Therefore, no epidemiological link has been established between disease in wild boars and domestic pigs. However, as long as there are susceptible wild boar populations in Spain a potential risk exists. Spanish authorities are addressing this potential by implementing a passive surveillance program. Beginning in 2003, Spain requires testing of hunted wild boars and those that are found dead to monitor the status of the wild boar population [7].

### *Characteristics of virus and epidemiological investigations*

The 2001-2002 CSF outbreaks in Spain were caused by an identical strain of virus. However, this CSF viral strain had not been previously isolated from within the European Union. These facts suggest that infected wild boars in the EU were not the source of CSF responsible for the Spanish epidemic. In fact, the EU Reference Laboratory in Hanover identified this viral strain as being genetically very close to variants associated with outbreaks in domestic swine in a number of East European countries, including Yugoslavia, Hungary, Rumania, Slovakia and Poland, suggesting an unconfirmed link.

Shortly before the onset of the CSF epidemic in Spain, the EU experienced an epidemic of Foot-and-Mouth Disease (FMD) affecting the United Kingdom, France, Ireland and the Netherlands. Spain, a major swine fattening and pork processing center in the EU, normally imported piglets from other EU Member States, particularly the Netherlands. However, due to FMD control measures, movement of live animals from the Netherlands was prohibited. To fill the gap, swine producers in Spain sought alternative sources of feeder piglets from Member States and from Eastern European countries unaffected by FMD. This change in marketing practices may have facilitated introduction of CSF into Spain by mechanisms which were not clearly identified. Although this may reflect a lapse in veterinary controls, MAPA was ultimately able to control the resulting epidemic.

The Cataluna government commissioned CRESA (*Centro de Investigacion en Sanidad Animal*) to conduct an epidemiological investigation of the initial 14 CSF outbreaks which occurred in June 2001 primarily in the Lerida province of Cataluna [39]. Among the conclusions CRESA reached were that (a) CSF infection apparently went undetected for a period of greater than 60 days; (b) the existence of other swine diseases during the fattening phase of production may have delayed recognition of CSF; (c) the holdings on which CSF was first confirmed were likely not to be the primary outbreaks in the epidemic; and (d) animal transportation vehicles and close proximity of the holdings played leading roles in the spread of the disease.

The CRESA investigation was not able to determine the exact pathway of how the CSF virus arrived in Spain, but it was able in most cases to establish probable links of how the virus spread once it entered Cataluna. However the report noted that for a few of the

holdings there were instances in which animal identification or movement records were deficient or missing, suggesting the possibility that illegal movements contributed to the introduction and spread of the disease.

EU regulations restrict import of live pigs only from CSF-free regions which do not vaccinate against CSF and shipments of live animals from outside the EU require veterinary inspections and certifications [30]. Since epidemiological investigations and trace-backs of legal animal movements failed to identify probable links to explain how the virus entered the country, Spanish authorities hypothesized that introduction likely resulted from the illegal import of CSF-infected animals [7, 39].

### *Response to the epidemic*

At the time of the outbreak, Spain had a number of control mechanisms in place, detailed in a CSF contingency plan which had been approved by the EC in 1999 [14]. This plan has been modified to incorporate lessons learned during the 2001/2002 epidemic [7].

Suspicion and detection of the CSF outbreak was delayed because the animals exhibited non-specific symptoms which were attributed to other swine diseases that had been diagnosed on these holdings, the presence of CSF virus was likely masked (see Table 5. for a chronology of initial detection). However despite this delay, once CSF infection was suspected, Spanish officials moved aggressively to contain spread of the virus.

Upon suspicion of CSF infection, protection and surveillance zones were established, movement controls implemented and depopulation of infected holdings commenced. Because the epidemic struck areas with high-density swine populations, Spanish authorities took the added measure of preventative slaughter of pigs within a 1 km. radius of infected premises and on contact farms with an epidemiological link.<sup>5</sup>

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<sup>5</sup> EU regulations stipulate that upon confirmation of CSF infection all swine on the infected holding are to be slaughtered [11]. Spain took the additional measure to slaughter all swine on the surrounding holdings within a 1 km radius [7, 8].

<b>Table 5. Chronology of events related to detection of Outbreak 2001/01</b>	
4/20/01 to 5/17/01	Affected pigs arrived at the farm in Soses, in the province of Lerida, Autonomous Region of Cataluna: 575 pigs went to shed 14 on 4/20/01 576 went to shed 15 on 4/27/01 450 went to shed 2 on 5/11/01 450 went to shed 3 on 5/17/01
5/31/01	First symptoms (loss of appetite in some pigs, no evident mortality) observed in shed 14
6/4/01	Morbidity (20%), 6 deaths in shed 14, attributed to outbreak of septicemic salmonellosis
6/8/01	Morbidity (30-40%), death total now at 20, diagnosis and treatment efficacy reassessed
6/11/01	Mortality now 88 out of 575 pigs (15%) in shed 14; sick pig observed in shed 15; mortality noted in sheds 2, 3 and 15; pig was slaughtered and sent to University of Barcelona, Veterinary Services for necropsy, pathologic lesions compatible with CSF were observed; Regional laboratory in Barcelona was notified
6/12/01	RCA officials performed clinical examinations and collected blood and tissue samples, quarantined the holding
6/13/01	Positive CSF diagnosis in 85% of samples (ELISA-Ag and PCR); samples sent to NRL for confirmation; and the slaughter of the pigs on the farm began
6/14/01	CSF diagnosis confirmed by NRL; slaughter of pigs on the farm completed; official notification of the outbreak was given by Royal Decree; 3 km protection zone and 10 km surveillance zone were established; and decision made for preventative slaughter of pigs within 1 km of affected holding

Source: CRESA [39]

Note: The CRESA report indicated that the source of the CSF virus could not be found on the farm and that there was no evidence of the virus on the farms from which the pigs originated. However it was noted that the farm was extremely large (capacity of about 6,000 pigs in numerous sheds) and many of the pigs did not carry identification. Also noted were entry and exit of numerous vehicles (i.e. for feed delivery, transport of pigs to slaughter, and transport of horses) which had contact with multiple holdings in Cataluna and in other countries.

In 2001, by Royal Decree 440/2001, a Health Rapid Reaction Network was set up to provide a rapid response to disease outbreaks. Through this network, 34 veterinarians and additional staff, under the auspices of the *Subdireccion General de Sanidad Animal*, were dispatched to work in collaboration with the authorities of the Autonomous Community of Cataluna [7, 8].

Spain instituted an intensive active surveillance program as well as education efforts aimed to increase vigilance and awareness. A special effort was made to persuade farmers and private veterinarians of the critical need for sampling of pigs found dead on their premises. Local veterinarians received instruction to improve their ability to recognize and diagnose CSF.

Regional authorities cancelled all animal movement vouchers and permits, and the European Commission implemented movement restrictions on the affected regions in Spain. Protection and surveillance zones were established and epidemiological investigations of all contact premises were conducted. Local police officials assisted in the enforcement of the movement control measures. Cleaning and disinfection stations were set up along the boundaries of the control zones.

Because of movement restrictions imposed on the huge swine population in the region, animal welfare problems resulted. Farmers had to house pigs far beyond their appropriate market weight leading to overcrowded facilities which could no longer conform to EC animal welfare requirements. These tensions led to farmers protesting in the streets outside of the RCA headquarters in Barcelona to express frustration with not being able to move their animals to slaughter. The Spanish government petitioned the EC eventually gaining approval for special market support procedures allowing animals within surveillance zones to be taken to designated locations for slaughter [19-27], thereby appeasing the resistance and decreasing the likelihood for illegal movement.

In fact, some farmers had attempted to move animals illegally [7, 8]. When such actions were detected, the perpetrators lost their eligibility for compensation, their animals were slaughtered, and legal fines imposed. At the time of the site visit, several legal cases remained pending. These actions demonstrated Spanish appreciation of the issue and ability to implement measures to address it. Spanish authorities were able to act effectively to control illegal movements.

Spread of CSF was contained and the disease was eventually eradicated in Spain. Since May 2002, there have been no further CSF outbreaks reported in Spain and affected holdings were successfully restocked. Even though significant, the spread of CSF during the 2001-2002 epidemic was less severe than what occurred during the 1997-98 epidemic which was evaluated in the 2000 Risk Analysis.

#### *Release assessment – Spain*

As discussed in the section on France, the APHIS 2000 risk analysis identified several risk factors that could impact the spread of CSF in the European Union. As for France, many of these factors contributed to the CSF epidemiology in Spain. However, the situation regarding the epidemic in Spain was different from the outbreak in France.

In the 2001-2002 Spanish epidemic, the CSF virus involved was not the viral strain known to infect wild boars in the EU. In fact, tests conducted at the EU Reference Laboratory in Hanover determined that the viral strain involved had not been previously isolated in any EU Member State, although it was similar to a strain associated with CSF outbreaks in domestic swine in Eastern European countries. This virus most likely arrived in Spain through the illegal import of infected pigs from a region outside the EU from which swine imports would not otherwise occur. Illegal animal movements also played a role in the spread of the disease after it was introduced into Spain. To address these illegal actions, Spain responded aggressively with criminal prosecutions and legal sanctions hoping to deter such illegal practices in the future.

The epidemic in Spain also differed in that CSF was introduced into an area with a high-density swine population, whereas in France the outbreak occurred in a low-density area.

This factor contributed to the extensive spread among holdings in close proximity – a finding consistent with the observations reported in the 2000 risk analysis.

While Spain was able to contain the disease within a limited region, the eradication process was somewhat prolonged because the virus was introduced into a high-density swine production area. Recognizing this problem, Spain is implementing zoning restrictions that require a minimum 1 km separation between large swine production facilities.

CSF also spread through movement of domestic animals (for fattening and slaughter) and movement of people, vehicles, and equipment contaminated with virus. In Spain, these risk factors were amplified by the frequent contacts associated with the extensively-integrated swine production businesses involved in the epidemic. Further complicating the problem, detection of CSF infection was delayed because the earliest symptoms were attributed to other swine diseases rather than CSF. This masking effect, delaying suspicion and diagnosis of CSF, allowed the disease to spread more broadly.

In part based on this experience in Spain and in other Member Countries, the European Commission adopted a Diagnostic Manual for CSF that established diagnostic procedures, sampling methods, and criteria for evaluation of the laboratory tests for CSF confirmation [10]. The manual notes that under field conditions clinical symptoms may only become evident in a holding two to four weeks after virus introduction or even longer if only adult breeding pigs or mild strains are concerned. Furthermore, it recognizes that the clinical signs of CSF are extremely variable and may be confused with many other diseases. As such the manual advises that CSF must be considered in case of many suspected swine diseases (including *salmonella* infections as was the case with the first 2001 outbreak in Spain) and as well in case of suspicion of an infectious disease of the reproductive tract. During the site visit, Spanish authorities stressed their ongoing efforts to educate veterinarians and farmers of the need of vigilance for CSF.

Once detected, Spanish officials responded aggressively with measures to contain and control the epidemic. Their efforts were enhanced by preventative slaughter of pigs within a 1 km. radius of infected premises, an intensive active surveillance program, effective movement controls (including detection and prosecution of illegal movements), and education efforts aimed to increase vigilance and awareness. Diagnostic instruction provided to local veterinarians and creation of the Health Rapid Reaction Network will enable regional authorities to quickly detect and respond to future animal disease crises.

Implementation of emergency response measures by regional authorities was greatly enhanced by the availability of data (e.g. geographic coordinates for swine holdings, animal identification records, animal census figures, and movement records). The availability of such data proved so valuable that MAPA is compiling similar information from all autonomous regions to create a national database to assist in emergency planning and response, disease modeling, and epidemiological investigations. This national database will improve Spain's ability to respond quickly and decisively to future animal disease outbreaks.



Since May 2002, there have been no further CSF outbreaks reported in Spain and affected holdings were successfully restocked. APHIS concludes that Spain has eradicated CSF from its domestic herd. The circumstances of this epidemic are consistent with the conclusions reached in the APHIS 2000 risk analysis, particularly in regards to the risks of secondary spread associated with delayed detection and a high swine population density. Therefore APHIS considers the importation of swine and swine products from Spain to be low-risk for CSF.

### **OTHER EU MEMBER STATES**

During this time period there were other CSF outbreaks in other EU Member States. Outbreaks also occurred in Luxembourg, Germany and Italy. As already noted, the outbreak in France was directly linked to outbreaks in Germany. The outbreaks in France, Germany and Luxembourg all involved CSF virus genotype Rostock 2.3, identical to that which is known to infect wild boars in the EU. The outbreaks in Italy also occurred in areas in which CSF-infected wild boars exist. APHIS intends to evaluate the CSF status of Luxembourg, Germany and Italy in subsequent risk assessments.

## General considerations

Epidemiological data continue to show that CSF spreads within the EU through movement of domestic animals (primarily pigs for fattening or slaughter); transmission from wild boars; or movement of people, vehicles or equipment contaminated with virus [6-8, 35, 37-39]. Since the 1997-1998 European epidemic, fortunately there has not been any reports of CSF virus being spread through distribution of contaminated semen [37, 38].

It was noted in the APHIS 2000 risk analysis that large numbers of swine move freely between Member States and within Member States [4]. Swine born in one Member State are routinely fattened or slaughtered in another. This production practice certainly played a role in the epidemiology of the outbreaks being reviewed.

Applicable mitigations discussed in the 2000 analysis included recognition of the mitigating effects of applicable EU regulations (e.g. animal movement certification, CSF control measures, stamping-out policy, etc.). For swine semen exports, the analysis suggested a 40-day holding period following semen collection as an additional mitigation. It also noted that current US import restrictions on breeding swine and swine semen imposed to protect against swine diseases other than CSF may further mitigate risk from these sources. Compliance with requirements of the US Food Safety and Inspection Service would also provide additional mitigations for pork exports to the US that were noted but not assessed in the previous risk analysis. Again, each of these factors is applicable for France and Spain.

Previously, APHIS recognized a region within the European Union as being low-risk for CSF. The underlying assumption for that recognition was that CSF outbreaks would continue to occur within the EU [Table 6. lists EU Member States in which outbreaks occurred in domestic swine since 1993]. However given that assumption, APHIS concluded that the veterinary infrastructure, surveillance and control measures existing in the EU were sufficient to detect and control those outbreaks before infected animals or products could arrive in the US.

**Table 6. CSF Outbreaks in Domestic Pigs EU Member States between 1993 and 2003\***

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003*
Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany	Germany
Italy	Italy	Italy	Italy	Italy	Italy	Italy	Italy	Italy		Italy
Belgium	Belgium			Belgium						
France									France	
	Austria	Austria	Austria							
				Netherlands	Netherlands					
				Spain	Spain			Spain	Spain	
							UK			
									Luxembourg	Luxembourg

\* as of September 30, 2003

Accepting the underlying assumption and conclusions from the 2000 analysis, it would be necessary for the CSF situation to exceed the severity (e.g. number of premises affected, spread of disease) of the one that occurred in the 1997-98 epidemic for the risk to be considered unacceptable. A comparison of the outbreaks evaluated in the APHIS 2000 risk analysis and this analysis of France and Spain are summarized in the Table 7.

**Table 7. Comparison between the 1997-1998 European Epidemic<sup>\*</sup> and CSF Outbreaks in the European Union during 2001-2002<sup>†</sup>**

	1997-1998 Epidemic <sup>*</sup>	2001-2002 EU Outbreaks <sup>†</sup>
Total outbreaks	611	81
Outbreaks outside of control zones	103	17
Outbreaks in swine semen centers	1	0
Outbreaks in swine breeding stock centers	1	0

<sup>\*</sup> Data Source APHIS 2000 risk analysis [4], data from twelve-month period in 1997

<sup>†</sup> Data Source: OIE Animal Health Reports, 2001 and 2002 [37, 38], data from a twenty-four month period 2001 through 2002, number of outbreaks outside of control zones estimated from OIE report data in consideration of movement restrictions established by EC regulations [25-27, 48-66].

## Summary release assessment

CSF-infected wild boars remain a potential source of disease and a risk factor in many EU Member States. CSF introduction into a high-density swine population and delayed detection can contribute significantly to disease spread once it is introduced. In this regard, the 2000 Risk Analysis showed that even during the worst epidemic (1997-1998) in known history and with consideration of these factors, the risk of a CSF incursion into the US from breeding swine, swine semen, pork and pork products exported from the EU would be low.

When APHIS concluded that under specified conditions breeding swine, swine semen and pork and pork products could be imported with extremely low risk from the region in the EU defined in its 2000 Risk Analysis and its final rule, APHIS implicitly recognized effectiveness of the EU regulations to detect and eliminate any outbreaks of CSF that might occur within the EU. Data used in the 2000 Risk Analysis reflected an extremely severe CSF epidemic that occurred in the EU in 1997 and 1998. The risk estimates generated in the analysis took into account the effectiveness of EU control measures, and where these measures failed, under these severe conditions. The 2000 Risk Analysis, therefore, estimates risk posed by any CSF epidemic of the same magnitude and the same level of detection and control failures as occurred during the 1997-98 epidemic. The 2001-2002 CSF outbreaks in France and Spain were of a lesser magnitude and reflect

fewer failures in detection and control, and therefore fall within the expectations of the 2000 Risk Analysis.

APHIS considers France and Spain to have detection, control, and eradication capacities similar to the EU Member Countries previously recognized as low-risk for CSF. Therefore, APHIS considers the risk of importation of CSF virus in swine and swine products from France and Spain to be low based on the demonstrated ability of these Member Countries to effectively contain CSF outbreaks in domestic swine.

## **Exposure and consequence assessments**

Based on the assessment that France and Spain are low-risk for CSF and therefore recognized as equivalent to the regions of the European Union evaluated in the 2000 Risk Analysis [4], the exposure and consequence assessments, and risk estimation as discussed in the former document are applicable.

In the 2000 Risk Analysis, the final results of the quantitative models reflect a combined release/exposure assessment. For the breeding swine and semen quantitative models, APHIS conservatively assumes that the “CSF virus is extremely infectious, so much that a single incursion of virus entering the US in a live animal or semen sample will result in an outbreak.” In the quantitative pork model, APHIS assumes that any ingestion of infected imported pork by any single domestic pig will result in an outbreak. APHIS recognizes that “should CSF be introduced into the US, the consequences would be significant. Not only would the costs of eradication be extremely high, but the cost in trade would be significant.” However, the estimates reported in the 2000 Risk Analysis suggest that the risk of importation with breeding swine, pork, and swine semen with mitigation (40 day quarantine with clinical observation) is extremely low.<sup>6</sup> “Therefore, in accordance with the OIE guidelines which state that consequence assessment is not necessary if the risk associated with release and/or exposure is low [40], APHIS did not calculate the precise economic impact of biological consequences.”

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<sup>6</sup> For breeding swine this risk was estimated as one or more incursions in an average of 33,670 years; for fresh or frozen pork, the estimate is one or more incursions in an average of 22,676 years; and for swine semen with mitigation, the estimate is one or more incursions in an average of 8,090 years [4].

## ABBREVIATIONS USED IN THE REPORT

<b>APHIS</b>	Animal and Plant Health Inspection Service [US]
<b>AFSSA</b>	<i>Agence Francaise de Securite Sanitaire des Aliments</i> [France]
<b>ANIMO</b>	Computerized network linking European Union veterinary authorities documenting animal movement within the European Union
<b>CCA</b>	Central competent authority – national-level veterinary authority for a country
<b>CRESA</b>	<i>Centro de Investigacion en Sanidad Animal</i> [Spain]
<b>CSF</b>	Classical swine fever
<b>DGAL</b>	<i>Direction Generale de L'Alimentation</i> [France]
<b>DDSV</b>	<i>Direction Departementale des Services Veterinaires</i> [France]
<b>EC</b>	European Commission
<b>EU</b>	European Union
<b>ELISA-Ag</b>	Antigen-capture enzyme-linked immunosorbent assay – a diagnostic test for early detection of CSF in live pigs. Herds suspected to have been infected recently are screened.
<b>FMD</b>	Foot and mouth disease
<b>GPS</b>	Global positioning system
<b>MAP</b>	<i>Ministere de l'Agriculture, de l'Alimentation, de la Peche et des Affaires Rurales</i> [France]
<b>MAPA</b>	<i>Ministerio de Agricultura, Pesca y Alimentacion</i> [Spain]
<b>NRL</b>	National reference laboratory
<b>OIE</b>	<i>Office International des Epizooties</i>
<b>PCR-RT</b>	Polymerase chain reaction reverse-transcription – a method in molecular epidemiology to obtain nucleotide sequence data for comparing genetic differences between virus isolates
<b>RCA</b>	Regional competent authority – subnational-level veterinary authority within a country
<b>SGSV</b>	<i>Subdireccion General de Sanidad Animal</i> [Spain]
<b>VS</b>	Veterinary Services [US]

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## APPENDIX 1

### Synopsis – Site Visit to France, Spain and Luxembourg, February 2003

#### Introduction

##### Primary disease of concern

Classical Swine Fever (CSF)

##### Other diseases of concern in the region

No other diseases are of concern in this evaluation since this is a follow-up of a previous evaluation focused specifically on CSF

##### Country or regions

France, Luxembourg, and Spain

##### Commodity

Breeding swine, semen and fresh pork

##### Potential pathways

Contamination of commodity

#### Objective

This evaluation constitutes a follow-up to the previous evaluation of the CSF status of the European Union, *Risk Analysis for Importation of Classical Swine Fever Virus in Swine and Swine Products from the European Union – December 2000*. The evaluation was conducted to assess the risk of regionalizing the European Union for CSF. APHIS published a proposed rule recognizing much of the European Union as CSF-free. Subsequently, CSF broke out in France, Luxembourg and Spain. As a result, France, Luxembourg and Spain were removed from the final rule published April 7, 2003, defining regions within the EU that are considered CSF-free.

Once France, Luxembourg and Spain met the OIE criteria for CSF-freedom after these recent outbreaks, APHIS, VS re-evaluated their disease status to determine whether these countries could be included with other regions of the European Union that are considered CSF-free.

### **Administrative Details**

The site visit was conducted February 3 - 6, 2003.

#### Site visit team

Anne Goodman, APHIS, VS, NCIE, RES Supervisory Staff Officer – Team Leader  
 Dan Sheesley, APHIS, International Services, Regional Director for Europe  
 Sara Kaman, APHIS, VS, NCIE Sanitary Trade Issues, Regional Coordinator for Europe  
 Chip J. Wells, APHIS, VS, NCIE, RES Risk Analyst  
 Richard Hull, Illinois State Veterinarian<sup>7</sup>

#### Site visit schedule

- Feb. 3      PARIS, FRANCE: *Direction Generale de L'Alimentation* (DGAL) headquarters; Ministry representatives: Paul Mennezier, Maryse Flamm, Xavier Pacholek.
- Welcome and review of materials previously presented to USDA/APHIS on Dec. 18, 2002
  - Chronology of events and epidemiology of single domestic CSF outbreak in April, 2002
  - Movement controls, cleaning and disinfection procedures, indemnity, surveillance activities, swill feeding prohibition, animal identification system
  - Wild boar surveillance and control plans
  - Administrative unit infrastructure for animal disease control
- METZ, FRANCE: *Direction Departementale des Services Veterinaires de la Moselle*; Ministry representatives: Denis Mazuy and Maryse Flamm.
- Visit prefecture veterinary office, Metz
  - Tour pig holding, site of outbreak, Chemery-les-Deux, Moselle
- Feb. 4      METZ, FRANCE: *Prefecture de la Moselle, Services Veterinaires* office
- Discussion, clarification, questions regarding local response to outbreak
- LUXEMBOURG: *Administration des Services Veterinaires, Ministere de l'Agriculture, de la Viticulture et du Developpement Rural* headquarters; Ministry officials: Arthur Bresch, CVO and staff.
- Veterinary Services – capacity and organization, legislation
  - Swine demographics, animal identification

<sup>7</sup> Dr. Richard D. Hull, Illinois State Veterinarian accompanied the APHIS delegation to evaluate the CSF status of France, Luxembourg and Spain. APHIS, VS usually invites an official representative of a state government to accompany APHIS personnel on site visits to evaluate animal disease status of countries requesting recognition.

- Wild boar epidemiology, surveillance, control measures, oral vaccination plan
  - Epidemiology of CSF in domestic pigs, overview of 12 outbreaks in 2002
  - Movement control measures, surveillance indemnity, cleaning and disinfection procedures, swill feeding prohibition
- Feb. 5      MADRID, SPAIN: *Subdireccion General de Sanidad Animal, Ministerio de Agricultura, Pesca y Alimentacion headquarters*; Ministry officials: Concepcion Sanchez Trujillano, CVO, Arnaldo Cabello Navarro, and staff.
- Veterinary Services (NCA) – capacity and organization, legislation
  - Swine industry and demographics, animal identification
  - Wild boar epidemiology, surveillance, control measures, oral vaccination plan
  - Overview of epidemiology of recent CSF outbreaks in domestic swine
  - Movement control measures, surveillance indemnity, cleaning and disinfection procedures, swill feeding prohibition
  - Overview of rapid response team approach in Spain and development of central database of animal epidemiologic information
- Feb. 6      BARCELONA, CATALUNYA, SPAIN: *Generalitat de Catalunya, Departamento d'Agricultura, Ramaderia i Pesca*; Ministry Officials: Iscle Selga i Jorba and staff.
- Veterinary services (RCA) – capacity and organization, laboratory capabilities
  - Overview of regional swine industry
  - Epidemiology of recent CSF outbreaks in domestic swine in the autonomous regions of Catalunya
  - Overview of control measures implemented during recent CSF outbreaks
- VIC, CAMARCA DE OSONA, CATALUNYA, SPAIN
- Toured pig holding, site of an outbreak in 2002
  - Visit site of temporary inspection and cleaning/disinfection station
  - Visit offices of local veterinary authority for Osona

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Importation of animals and animal products: Procedures for requesting recognition of regions. Application for recognition of the animal health status of a region. In Title 9, *Code of Federal Regulations*, Part 92.2. Animal and Plant Health Inspection Service.

Rinderpest, foot-and-mouth disease, fowl pest (fowl plague), Exotic Newcastle Disease, African swine fever, hog cholera, and bovine spongiform encephalopathy: Prohibited and restricted importations. Pork and pork products from regions where hog cholera exists. In Title 9, *Code of Federal Regulations*, Part 94.9. Animal and Plant Health Inspection Service.

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## **APPENDIX 2**

### **Sample Animal Movement Documents**

#### **Contents**

**Link to European Union model swine health certificates**

**Sample France swine health certificate – Figures 3a-d**

**Samples Catalonia animal movement vouchers and permit – Figures 4-6**

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#### **European Union**

Model animal health certificates are contained in Commission Decision 2002/199/EC and can be accessed at [http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l\\_071/l\\_07120020313en00010035.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_071/l_07120020313en00010035.pdf).

- Model C (page 21-25) for movement of breeding and production swine.
- Model D (page 26-30) for movement of swine to immediate slaughter.



Figure 3a. French swine health certificate, page 1 of 4 (translation unavailable).

REPUBLIQUE FRANÇAISE		Certificat sanitaire	Gesundheitszeugnis
		Pour les animaux des espèces porcines de boucherie <sup>(1)</sup> d'élevage <sup>(1)</sup> de rente <sup>(1)</sup>	Für Schlacht-, <sup>(1)</sup> Zucht-, <sup>(1)</sup> Nutzschweine <sup>(1)</sup>
- Etat membre d'origine	France - Frankreich	- Ursprungsmitgliedstaat	
- Région d'origine (département)	MOSELLE	- Ursprungsgebiet (Département)	
- Numéro du certificat <sup>(1)</sup>	57 01 PB 0000	- Nummer des Gesundheitszeugnisses <sup>(1)</sup>	
- Numéro de référence par rapport au certificat original <sup>(1)</sup>		- Referenznummer des Originalzeugnisses <sup>(1)</sup>	
<b>SECTION A</b>		<b>ABSCHNITT A</b>	
- Nom et adresse de l'expéditeur		- Name und Anschrift des Versenders	
- Nom et adresse de l'exploitation d'origine <sup>(2)</sup>		- Name und Anschrift des Ursprungsbetriebes <sup>(2)</sup>	
- Numéro d'agrément du négociant <sup>(3)</sup>		- Zulassungsnummer des Händlers <sup>(3)</sup>	
- Adresse et numéro d'agrément du centre de rassemblement dans l'Etat membre d'origine <sup>(4)</sup> ou de transit <sup>(4)</sup>		- Anschrift und Zulassungsnummer der Sammelstelle im Ursprungs- oder Durchführungsmitgliedstaat <sup>(4)</sup>	
<b>- Informations sanitaires</b>		<b>- Tiergesundheitliche Angaben</b>	
Je certifie que chaque animal du lot décrit ci-après :		Ich bestätige hiermit, daß jedes Tier der nachstehenden Sendung:	
<p>1) provient d'une exploitation d'origine et d'une zone qui conformément à la législation communautaire ou nationale ne font l'objet d'aucune interdiction liée à des maladies animales touchant les espèces porcines;</p> <p>2) <sup>(5)</sup> est un animal d'élevage <sup>(5)</sup> ou de rente <sup>(5)</sup> qui a séjourné, selon les informations disponibles, dans l'exploitation d'origine au cours des trente derniers jours ou depuis sa naissance s'il est âgé de moins de trente jours et qu'aucun animal importé d'un pays tiers n'a été introduit dans cette exploitation au cours de cette période à moins qu'il n'ait été complètement isolé des autres animaux de l'exploitation.</p>		<p>1) aus einem Ursprungsbetrieb und einem Gebiet stammt, der (das) weder nach Gemeinschaftsrecht noch nach einzelstaatlichem Recht verboten oder Beschränkungen aufgrund von Schweineerkrankungen unterliegt;</p> <p>2) <sup>(5)</sup> ein Zucht- <sup>(5)</sup> oder Nutztier <sup>(5)</sup> ist, das sich sowohl feststellbar die letzten 30 Tage oder, wenn es sich um weniger als 30 Tage alte Tiere handelt, seit seiner Geburt im Ursprungsbetrieb aufgehalten hat, und daß während dieser Zeit keine aus einem Drittland eingeführten Tier in diesen Betrieb eingestellt worden ist, es sein denn es ist von allen übrigen Tieren im Betrieb abgesondert worden.</p>	
<b>SECTION B</b>		<b>ABSCHNITT B</b>	
<b>Description du lot</b>		<b>Beschreibung der Sendung</b>	
- Date de départ		- Versendedatum	
- Nombre total d'animaux		- Gesamtzahl der Tiere	
<b>Identification des animaux</b>		<b>Kennzeichnung der Tiere</b>	
Race / Rasse	Date de naissance / Geburtsdatum	Mention officielle / amtliche Kennzeichnung	
VOIR LISTE JOINTE	SEHE BEILIEGENDE LISTE		
<p>- Utiliser si nécessaire, une liste complémentaire qui sera jointe, revêtue de la signature et du cachet du vétérinaire officiel ou agréé.</p> <p>Weitere Angaben gegebenenfalls auf einem Beiblatt, das vom amtlichen bzw. zugelassenen Tierarzt zu unterzeichnen und abzustempeln ist</p>			

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Source: Direction Generale de L'Alimentation, February 2003.

Figure 3b. French swine health certificate, page 2 of 4 (translation unavailable).

- Numéro d'agrément du transporteur (s'il est différent du transporteur figurant à la section C et/ou si la distance de transport est supérieure à 50 km)		- Zulassungsnummer des Transportunternehmers (Wenn nicht mit dem in Abschnitt C angegebenen Transportunternehmer identisch oder bei Entfernungen von mehr als 50 km)									
- Moyen de transport		- Transportmittel									
- Numéro d'enregistrement		- Amtliches Kennzeichen									
<p>* les sections A et B doivent être revêtue du cachet et de la signature :</p> <p>- du vétérinaire officiel de l'exploitation d'origine si ce n'est pas le même que celui qui signe la section C ;</p> <p>- ou</p> <p>- être signées par le vétérinaire agréé de l'exploitation d'origine lorsque l'Etat membre d'expédition a mis en place un système de réseau de surveillance approuvé au titre de la décision J.E.C. de la commission ;</p> <p>- ou</p> <p>- être signées par le vétérinaire officiel responsable du centre de rassemblement agréé à la date de départ des animaux.</p>		<p>* Die Abschnitte A und B der Bescheinigung sind</p> <p>- abzustempeln und zu unterzeichnen vom amtlichen Tierarzt des Ursprungsbetriebes, wenn Abschnitt C von einem anderen amtlichen Tierarzt unterzeichnet wird,</p> <p>oder</p> <p>- zu unterzeichnen vom zugelassenen Tierarzt des Ursprungsbereichs, wenn der Versendungsmitgliedstaat ein gemäß Entscheidung J.E.C. der Kommission zugelassenes Überwachungsnetzwerk eingeführt hat</p> <p>oder</p> <p>- zu unterzeichnen vom amtlichen Tierarzt der zugelassenen Sammelstelle am Tag der Weiterverladung der Tiere</p>									
<p align="center"><b>Certification relative aux sections A et B / Bescheinigungen zu den Abschnitten A und B</b></p> <table border="1"> <tr> <td>Cachet officiel / amtlicher Stempel</td> <td>Lieu / Ort</td> <td>Date / Datum</td> <td>Signature * / Unterschrift *</td> </tr> <tr> <td></td> <td>SAINT JULIEN LES METZ</td> <td></td> <td></td> </tr> </table>				Cachet officiel / amtlicher Stempel	Lieu / Ort	Date / Datum	Signature * / Unterschrift *		SAINT JULIEN LES METZ		
Cachet officiel / amtlicher Stempel	Lieu / Ort	Date / Datum	Signature * / Unterschrift *								
	SAINT JULIEN LES METZ										
- Nom et qualité (en lettres majuscules)		- Name und Amtsbezeichnung (in Großbuchstaben)									
- Adresse du vétérinaire qui signe le document		- Anschrift des unterzeichnenden Tierarztes									
SERVICES VETERINAIRES DE LA MOSELLE 1 RUE DE BORT LES ORGUES 57078 ST JULIEN LES METZ											
SECTION C <sup>(6)</sup>		ABSCHNITT C <sup>(6)</sup>									
- Nom et adresse du destinataire		- Name und Anschrift des Empfängers									
- Nom et adresse de l'exploitation de destination <sup>(1)</sup> — ou — du centre de rassemblement agréé dans l'Etat membre de destination <sup>(2)</sup> (recompter cette rubrique en lettres d'imprimées)		- Name und Anschrift des Bestimmungsbetriebes <sup>(1)</sup> oder der im Bestimmungsland zugelassenen Sammelstelle <sup>(2)</sup> (in Druckschreibweise)									
- Nom		- Name									
- Rue		- Straße									
- Code postal		- Postleitzahl									
- Ville / Comté / Province		- Stadt/Kreis/Bezirk									
- Etat membre	Luxembourg-	- Mitgliedstaat									
- Numéro d'agrément du négociant <sup>(1)</sup>		- Zulassungsnummer des Händlers <sup>(2)</sup>									
- Numéro d'agrément du transporteur (si la distance de transport est supérieure à 50 km) <sup>(7)</sup>		- Zulassungsnummer des Transportunternehmers (bei Entfernungen von über 50 km) <sup>(7)</sup>									
- Moyen de transport		- Transportmittel									
- Numéro d'enregistrement		- Amtliches Kennzeichen									
Après inspection réglementaire, je certifie que :		Nach ordnungsgemäßer Untersuchung bescheinige ich, daß									
1) les animaux décrits ci-dessus ont été inspectés le :		1) die obigen Tiere untersucht wurden am:									
(Date / Datum)											
dans les vingt-quatre heures précédant le départ prévu et n'ont présenté aucun signe clinique de maladie infectieuse ou contagieuse;		innerhalb der letzten 24 Stunden vor ihrer Versendung und keine klinischen Anzeichen für eine infektiöse oder ansteckende Krankheit aufwiesen;									

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Source: Direction Generale de L'Alimentation, February 2003.



Figure 3c. French swine health certificate, page 3 of 4 (translation unavailable).

2) l'exploitation d'origine et, le cas échéant, le centre de rassemblement agréé et la zone dans laquelle ils sont situés ne font l'objet d'aucune interdiction ou limitation liées à des maladies animales touchant les espèces porcines conformément à la législation communautaire ou nationale;	2) der Ursprungsbetrieb und gegebenenfalls die zugelassene Sammelstelle und das Gebiet, in dem sie liegen, keinen Verbote oder Beschränkungen aufgrund von Schweine-seuchen nach Gemeinschaftsrecht oder einzelstaatlichem Recht unterliegen;		
3) toutes les dispositions applicables de la directive 64/432/CEE du conseil sont respectées;	3) alle anwendbaren Bestimmungen der Richtlinie 64/432/EWG des Rates erfüllt sind;		
4) <sup>(1)</sup> les animaux ci-dessus sont conformes aux garanties additionnelles pour :	4) <sup>(1)</sup> die vorstehend genannten Tiere den zusätzlichen Seuchegarantien genügen:		
- maladie <b>AUJESZKY</b>	- Seuche		
conformément à la décision 93/24/CE de la Commission;	- gemäß der Entscheidung 93/24/EG der Kommission		
5) les animaux ne sont pas restés plus de six jours dans le centre de rassemblement agréé <sup>(2)</sup> ;	5) die Tiere sich nicht länger als sechs Tage in der zugelassenen Sammelstelle befunden haben <sup>(2)</sup> ;		
6) au moment de l'inspection, les animaux indiqués ci-dessus étaient aptes à être transportés sur le trajet prévu, conformément aux dispositions de la directive 91/628/CEE <sup>(3)</sup> ;	6) die genannten Tiere waren zum Zeitpunkt der Untersuchung transportfähig für eine Beförderung nach den Bestimmungen der Richtlinie 91/628/EWG <sup>(3)</sup> ;		
* La section C du certificat sanitaire doit être revêtu du cachet et de la signature du vétérinaire officiel de l'exploitation d'origine, - ou du centre de rassemblement agréé situé dans l'Etat membre d'origine, - ou du centre de rassemblement agréé situé dans l'Etat membre de transit lorsqu'il remplit le certificat d'expédition des animaux vers l'Etat membre de destination.	* Abschnitt C der Gesundheitsbescheinigung ist abzustempeln und zu unterzeichnen vom amtlichen Tierarzt des Ursprungsbetriebes - oder der zugelassenen Sammelstelle im Ursprungsmitgliedstaat oder der zugelassenen Sammelstelle im Durchführungsmitgliedstaat, wenn er die Bescheinigung zum Weitertransport der Tiere in den Bestimmungsmitgliedstaat ausfüllt.		
<b>Certification relative à la section C / Bescheinigung zu Abschnitt C</b>			
Cachet officiel / amtlicher Stempel	Lieu / Ort	Date / Datum	Signature * / Unterschrift *
	SAINT JULIEN LES METZ		
Nom et qualité (en lettres majuscules)		Name und Amtsbezeichnung (in Großbuchstaben)	
- Adresse du vétérinaire qui signe le document	- Anschrift des unterzeichnenden Tierarztes		
<b>SERVICES VETERINAIRES DE LA MOSELLE RUE DE BORT LES ORGUES 57078 ST JULIEN LES METZ</b>			
<b>Informations supplémentaires</b>		<b>Zusatzinformationen</b>	
1. Ce certificat doit être revêtu d'un cachet et d'une signature d'une couleur différente de celle utilisée pour l'impression.		1. Die Bescheinigung ist in einer anderen Farbe als der Druckfarbe abzustempeln und zu unterzeichnen.	
2. Ce certificat est valable pendant dix jours à compter de la date de l'inspection sanitaire effectuée dans l'Etat membre d'origine et visée à la section C.		2. Diese Bescheinigung ist ab dem Tag der Gesundheitsuntersuchung im Ursprungsmitgliedstaat gemäß Abschnitt C zehn Tage gültig.	
3. Les renseignements devant figurer sur ce certificat doivent être introduits dans le système ANIMO à la date d'émission du certificat et au plus tard dans les vingt quatre heures suivant celle-ci.		3. Die erforderlichen Einträge in dieser Bescheinigung sind am Ausstellungstag, spätestens jedoch innerhalb von 24 Stunden danach, im ANIMO-System zu registrieren.	
(1) Biffer les mentions inutiles.		(1) Unzutreffendes streichen	
(2) Ne s'applique pas lorsque les animaux sont originaires de plusieurs exploitations.		(2) entfällt, wenn Tiere aus verschiedenen Betrieben stammen	
(3) Biffer la mention inutile.		(3) Unzutreffendes streichen	
(4) A compléter par le vétérinaire officiel de l'Etat membre		(4) Vom amtlichen Tierarzt des Ursprungsmitgliedstaates	
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Source: Direction Generale de L'Alimentation, February 2003.

Figure 3d. French swine health certificate, page 4 of 4 (translation unavailable).

d'origine.	auszufüllen
(5) A compléter par le vétérinaire officiel du centre de rassemblement agréé de l'Etat membre de transit.	(5) Vom amtlichen Tierarzt der zugelassenen Sammelstelle des Durchfuhrmitgliedstaates auszufüllen.
(6) Biffer si le certificat sanitaire est utilisé pour le mouvement d'animaux dans l'Etat membre d'origine et que seules les sections A et B sont complétées et signées.	(6) Zu streichen, wenn die Bescheinigung für das Verbringen von Tieren innerhalb des Ursprungs-mitgliedstaates ausgestellt wird und nur die Abschnitt A und B ausgefüllt und unterzeichnet werden.
(7) Biffer si le transporteur n'est pas différent de celui identifié à la section B.	(7) Zu streichen, wenn der Transportunternehmer mit dem in Abschnitt B angegebenen Transportunternehmer identisch ist.
(8) Cette déclaration ne dispense pas les transporteurs des obligations qui leur incombent en vertu des dispositions communautaires en vigueur, notamment pour ce qui est de l'aptitude des animaux à être transportés.	(8) Diese Anforderung befreit Transporteure nicht von ihren Pflichten in Zusammenhang mit geltenden Gemeinschaftsvorschriften, insbesondere hinsichtlich der Transportfähigkeit der Tiere.
ANIMAUX CONFORMES A LA DECISION 2002/1009/CE DE LA COMMISSION DU 27 DECEMBRE 2002 CONCERNANT LES MESURES DE PROTECTION CONTRE LA PESTE PORCINE CLASSIQUE EN France, EN Allemagne ET AU Luxembourg (JO L 351 DU 28.12.2002, PAGE 112)	
CS5701PB0PAGE4/4	

Source: Direction Generale de L'Alimentation, February 2003.

Figure 4. Sample of voucher for movement of animals to slaughter within autonomous region of Catalonia (unofficial translation by APHIS).

Regional Government of Catalonia  
Department of Agriculture,  
Livestock and Fisheries

Health document for the transfer of animals  
to slaughter houses located  
in the region of Catalonia.

Series A A No. **0737201**

Mr/s. .... with National ID # .....  
resident in ..... in the municipality of .....  
..... as owner of the farm located in the municipal district of .....  
..... with official brand .....  
DECLARES: That in the animals housed on his/her farm, he/she has observed no abnormality, and, therefore, under the  
authorization received, transfers the quantity of ..... (\*) animals identified with the above  
official brand to the slaughter house at ..... in the town of .....  
..... The transfer is made by Mr/s. ....  
with National ID No. ...., resident in .....  
in the municipality of ..... driver of vehicle, license # .....  
..... (\*) ..... 20.....  
Owner of the livestock farm (Signature) SPECIES .....  
Breeder ..... (\*)  
Fattening ..... (\*)  
System of identification .....  
Place of identification .....

\* Write in letters and numerals  
Valid for: 24 hours after date of issue

Source: Generalitat de Catalunya, Departamento d'Agricultura, Ramaderia i Pesca, February 2003.

Figure 5. Sample of voucher for movement of live animals within autonomous region of Cataluna (translated).

Regional Government of Catalonia  
Department of Agriculture,  
Livestock and Fisheries

Health document for the transfer of animals as live from  
health classified farms. Valid solely for circulation in  
the region of Catalonia. NOT VALID FOR POULTRY.

Series A A No. 262081

Mr/s. .... with National ID # .....  
resident in ..... in the municipality of .....  
..... as owner of the farm located in the municipal district of .....  
..... with official brand .....

DECLARES: That his/her farm is under veterinary control and that in the animals housed there, no abnormality is observed. This farm carries out keeps up to date hygiene and prophylactic programs and complies with the health regulations of Article 4 of Decree 94/1988. Therefore, under the authorization received, transfers the quantity of ..... (\*) animals identified with the above official brand to the farm owned by

Mr/s. .... with National ID No. ....  
resident in ..... in the municipality of .....  
driver of vehicle, license # .....

Characteristics of the animals: Species

# Breeders ..... ( \*) # New pasture fattening ..... ( \*)

# Fattening ..... ( \*) # Suckling ..... ( \*)

System of identification ..... Place of identification .....

Individual identification .....  
.....  
.....

Health classification of the farm .....  
# ..... (\*) ..... 20.....

Owner of the livestock farm (Signature)

\* Write in letters and numerals

Valid for: 24 hours after date of issue

Source: Generalitat de Catalunya, Departamento d'Agricultura, Ramaderia i Pesca, February 2003.

Figure 6. Sample of permit for movement of live animals from Catalonia to another autonomous region within Spain (translated).

Regional Government of Catalonia Department of Agriculture, Livestock and Fisheries				Copy to accompany the animals			
<b>LIVESTOCK ORIGIN AND HEALTH GUIDE</b>							
Application by the stockbreeder				Series and Number			
Species of livestock							
Name and surnames				National ID #			
Address				Town			
As _____ of the livestock farm				with official brand			
being the owner of the animals							
I DECLARE, under my own liability, that:							
1. No abnormality is observed in the animals housed on the above farm.							
2. I will transfer the animals indicated below to							
Type of transfer				Brand / Registry			
Name of farm of destination				Town / Province			
Identification of the animals							
# Animals	Species	Race	Sex	Age	Weight	Identification	Vaccination / Control
and REQUEST that the official veterinarian issues the corresponding Livestock Origin and Health Guide							
(Signature)							
Livestock Origin and Health Guide				Valid (*)			
_____, official veterinarian of							
Declares							
That the farm _____ with official brand _____ in the town of _____							
is under veterinary control and that in the town no infectious/contagious disease has been declared which hinders the transfer of the animals.							
And, at the request of _____, as owner of the above farm,							
I issue this document and authorize the transfer of the animals shown.							
The veterinarian							
(Signature)							
(*) While the epizootological situation does not change							
Observations							
Mr/s. _____ with National ID # _____				diver of the vehicle with license # _____, undertakes to transport on this date the animals covered by this document from the farm of origin to the destination shown here.			
(Town and date)				(Signature)			

Source: Generalitat de Catalunya, Departamento d'Agricultura, Ramaderia i Pesca, February 2003.